

Construction



Southern construction in the year just ended hit an all-time peak, topping previous records by thirteen per cent.

The \$4,369,152,000 for the twelve months included \$1,214,337,000 for private building; \$1,126,714,000 for public building; \$891,132,000 for industrial construction; \$622,535,000 for highways and bridges, and \$514,434,000 for heavy engineering projects.

December's total for projects in the award stage below the Mason and Dixon line was \$637,532,000. Also a record breaker, the figure was the highest for a single month in the history of the South.

The December figure, which represents twelve per cent of the 1950 aggregate, embraced \$332,080,000 for public building; \$130,388,000 for private building; \$64,971,000 for highways and bridges; \$58,545,000 for engineering construction, and \$51,548,000 for industrial work.

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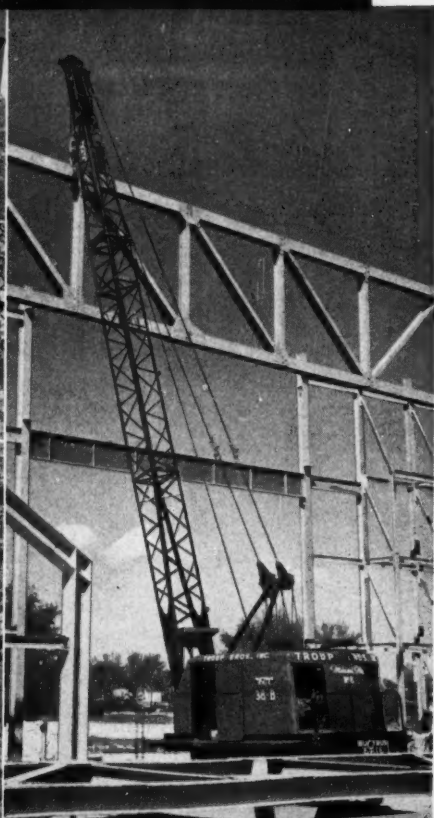
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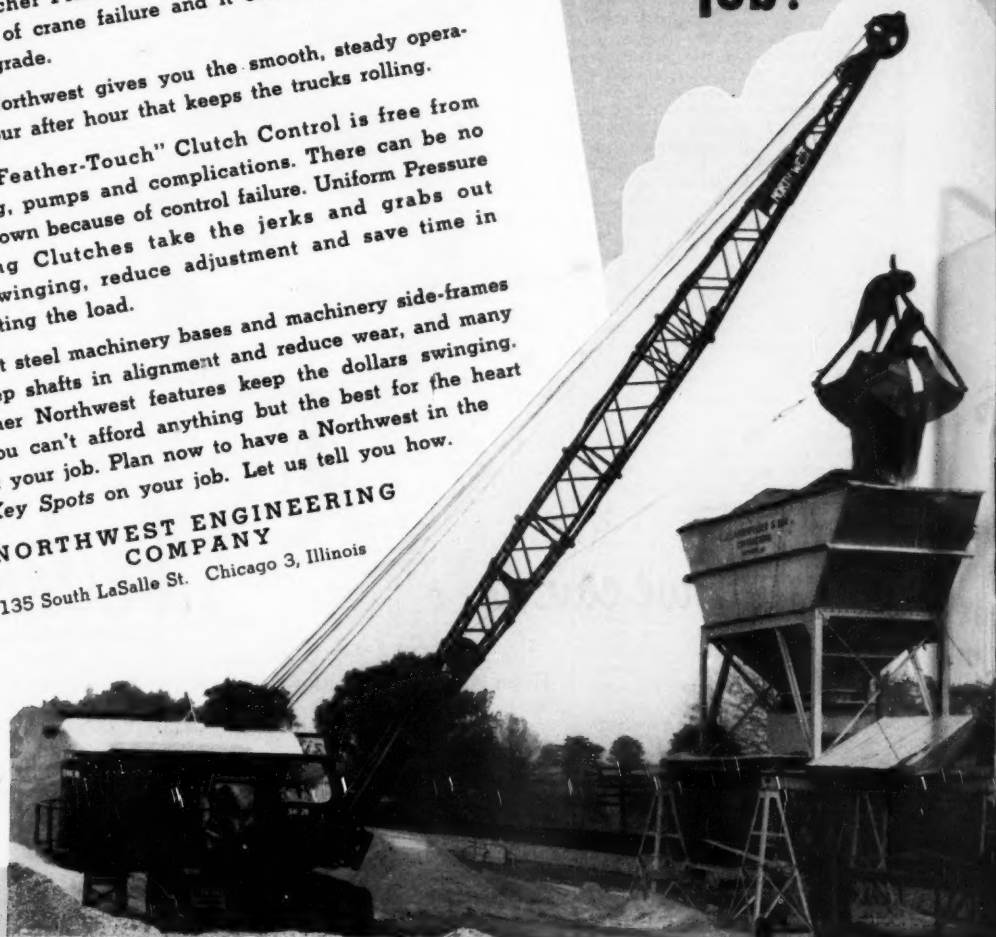
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Salisbury Sewage Plant To Cost \$1,000,000

A proposed sewage treatment plant for Salisbury, Md., is now in the advanced planning stage. The project will cost more than \$1,000,000, says Clarke Gardner, designing engineer.

The treatment plant is the second of two projects in the city's efforts to improve its health and sanitary conditions. The first is a \$261,000 incinerator now practically completed.

Mr. Gardner, who heads the Salisbury engineering firm of Clarke Gardner and Associates, said the sewage treatment plans are about 75 per cent complete. A long road still stretches ahead before the project will become a reality.

With the incinerator about complete, the city has only about \$100,000 or so of a \$400,000 bond issue authorized for both projects. The 1951 session of the Maryland legislature will be asked to authorize a \$1,000,000 bond issue. A referendum would be required.

Mr. Gardner has passed the preliminary cost data along to his employers, the Salisbury Incinerator and Sewage Disposal Plant Commission, headed by F. A. Grier, Jr. Mr. Grier, in turn, has presented the problem to the Mayor and Council which must find the funds.

Mr. Gardner said the sewage treatment plant will virtually clean up the Wicomico River which now carries all of the city's sewage. The plant designed by his firm, he said, will meet standards set by the Maryland Pollution Commission and the State Health Department.

It is designed, he said, for a minimum flow of 3.6 million gallons per day with a maximum of 10.6. That would handle a population of 33,000 persons. The city's present population, including suburban areas, is about 20,000.

The project is divided into three parts. First, a trunk sewer line, \$80,000; two pumping stations, \$95,000; a main under the river bottom, \$50,000, and a plant bypass and outfall, \$40,000.

Then there are the primary and secondary treatment plants including a grit chamber, settling tank, digester, sledge beds, filters and chlorinators, \$435,000.

Improvements at the site, which is along the river, will run another \$33,000 or so, plus engineering and administrative costs.

The incinerator, among the most modern in the country, is equipped with a 108-foot-tall stack, crane bin feed, electric doors, a communications system and a number of other safety features.

It is 125 tons capacity and its completion will eliminate the city dump—an eyesore of long standing. The big building is faced with yellow brick and glass. It rests on concrete piling, sunk into the existing dump bed.

The national average of refuse collected in cities is two pounds per person per day. In Salisbury, the average is six pounds per day, a figure that had to be calculated when the project was first designed.

The equipment is by the Nichols Engineering and Research Co. of New York.



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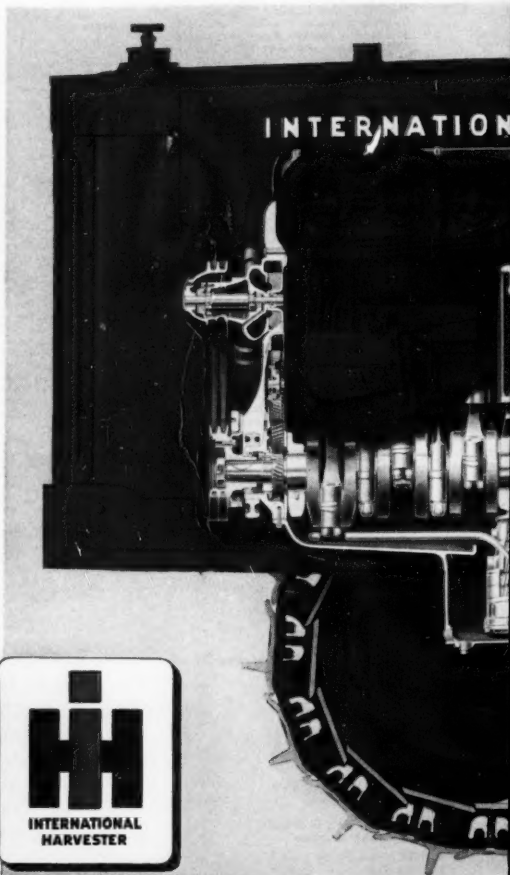
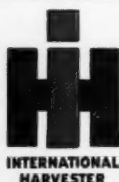
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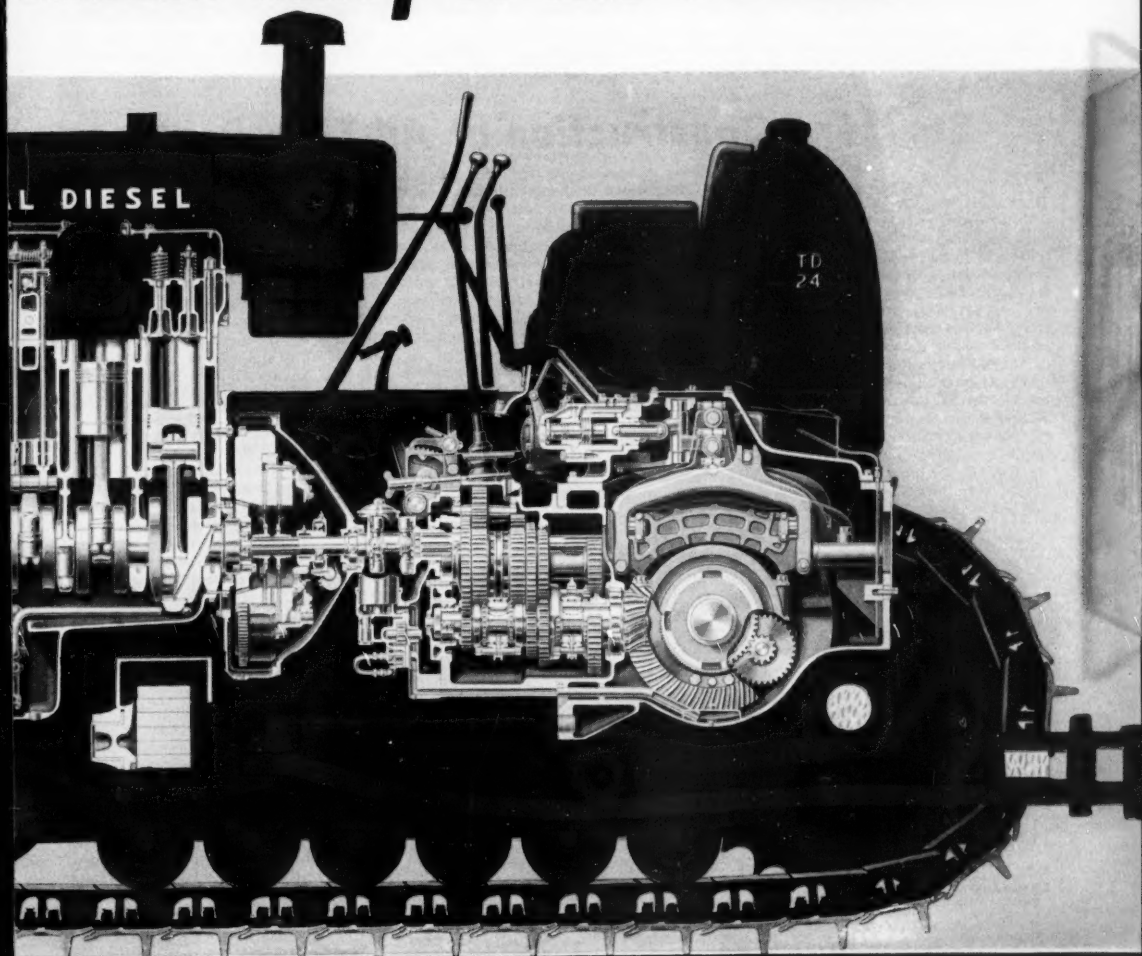
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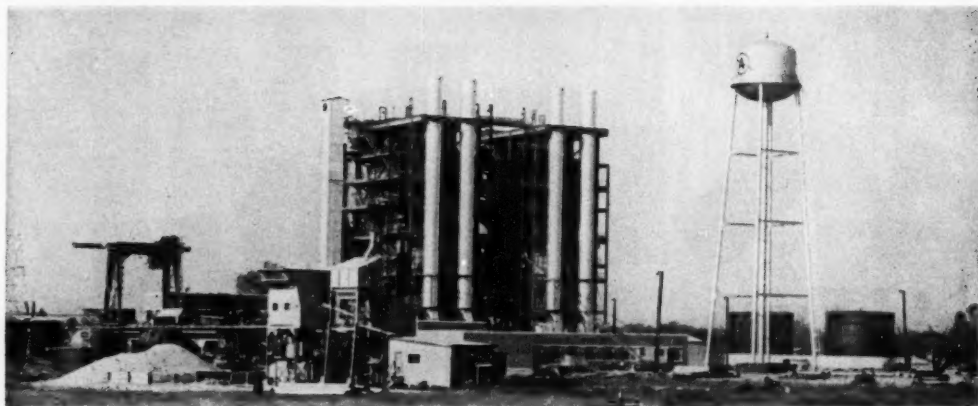
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OF A CHAMP

inside story of the TD 24





Above—Generating plant being erected at Forrest City, Ark. by Arkansas Power and Light Co. To cost \$15,000,000, the plant will have a capacity of 130,000 kilovolts with a maximum of 150,000 kilovolts daily. Ebasco, Inc., is the contractor.

Southern Construction at All-Time Peak

SOUTHERN construction last year hit an all-time peak.

Value of contracts awarded in the sixteen states below the Mason and Dixon line was \$4,369,152,000, which not only was thirty-six per cent above the total for the preceding year, but was thirteen per cent larger than the previous record established in the second world war year of 1942.

Contracts reported in December made a heavy contribution to the twelve-month total. Also a record breaker, the December figure was \$637,532,000, the highest for a single month in the history of the South. Nearest monthly value was the \$582,302,000 for July of 1950.

Substantial increases in all phases of southern construction were responsible

for the record twelve-month total. Largest was registered in public building. In this field, the current value was fifty per cent above its 1949 counterpart. The increase in industrial construction was thirty-eight per cent, as compared with last year. Engineering construction was ahead thirty-five per cent; highways and bridges, twenty-seven per cent, and private building, up twenty-six per cent.

Private building and public building approximated the same percentages of the \$4,369,152,000 total. The former represented twenty-eight per cent; the latter, twenty-six per cent. Twenty per cent of the year's figure was industrial construction. Highways and bridges formed about fourteen per cent and engineering construction, about twelve per

cent of the figure.

A review of the components of the \$3,877,848,000 total for 1942, the record year displaced by the twelve months just ended, shows public building at the top of the list with \$2,054,782,000 and industrial construction second with \$1,086,304,000. Both were practically all war projects. Engineering work amounted to \$447,014,000. Highway and bridges, total \$170,472,000, and private building with \$119,276,000 showed the result of drastic federal restrictions.

The \$4,369,152,000 total for 1950 embraced \$1,214,337,000 for private building, \$1,126,714,000 for public building, \$891,132,000 for industrial construction, \$622,535,000 for highways and bridges and \$514,434,000 for heavy engineering projects. Federal curbs are now in effect on recreational and amusement building, with strict credit controls on residential construction.

Private building in the twelve months was made up of seventy per cent residential construction, total for which was \$855,103,000, and the balance in other types of privately financed work. These were \$126,490,000 for office structures, \$120,234,000 for assembly buildings, such as churches and theatres, and \$112,510,000 for commercial buildings, including filling stations.

Residential construction for the twelve months of 1950 was thirty-three per cent larger in value than in its predecessor. The \$126,490,000 for office building represents a thirteen per cent increase. A six per cent rise was recorded in assembly building value in 1950. Commercial building was up almost twenty-five per cent.

The \$1,126,147,000, second largest in the 1950 group, embraces \$710,244,000 for government building as such and \$416,470,000 for schools. Government building is up seventy per cent, as compared with

SOUTH'S CONSTRUCTION BY TYPES

	December, 1950 Contracts Awarded	December, 1950 Contracts to be Awarded	Contracts Awarded Twelve Months 1950	Contracts Awarded Twelve Months 1949
PRIVATE BUILDING				
Assembly (Churches, Theatres, Auditoriums, Fraternal)	\$9,669,000	\$9,535,000	\$120,234,000	\$112,641,000
Commercial (Stores, Restaurants, Filling Stations, Garages)	12,838,000	10,898,000	112,510,000	90,090,000
Residential (Apartments, Hotels, Dwellings)	86,632,000	88,728,000	855,103,000	638,692,000
Office	27,249,000	9,455,000	126,490,000	111,090,000
	\$130,388,000	\$118,616,000	\$1,214,337,000	\$952,513,000
INDUSTRIAL	\$51,548,000	\$147,457,000	\$891,132,000	\$641,444,000
PUBLIC BUILDING				
City, County, State, Federal and Hospitals	\$297,270,000	\$44,606,000	\$710,244,000	\$415,559,000
Schools	34,810,000	61,433,000	416,470,000	332,926,000
	\$332,080,000	\$106,039,000	\$1,126,714,000	\$748,485,000
ENGINEERING				
Dams, Drainage, Earthwork, Airports	\$39,903,000	\$16,830,000	\$263,116,000	\$160,354,000
Federal, County, Municipal, Elec- tric	4,866,000	290,795,000	109,778,000	88,978,000
Sewers and Waterworks	13,776,000	20,539,000	141,540,000	124,784,000
	\$58,545,000	\$328,164,000	\$514,434,000	\$374,116,000
ROADS, STREETS, BRIDGES	\$64,971,000	\$126,282,000	\$622,535,000	\$488,463,000
TOTAL	\$637,532,000	\$826,538,000	\$4,369,152,000	\$3,295,021,000

the value in the twelve months of 1949. School construction shows a rise of about twenty-five per cent.

The \$622,535,000 for highways in the South included a number of large programs. Texas, for instance, was reported as awarding contracts in excess of one hundred million dollars. Approximately \$68,335,000 in federal aid is available for construction of state highways there in 1951 and 1952. This includes an appropriation of about \$29,000,000 for each of the federal fiscal years of 1952 and 1953. Matching state funds mean a total of \$126,335,000 for the two years.

Other southern states were active also in highway construction during the last year. The total of awards reported for Virginia is placed at \$73,417,000. North Carolina's aggregate was \$58,594,000. Maryland was also above the fifty million dollar mark and a retiring highway commission chairman recommended that the activity of the last few years be continued at around that rate.

Heavy engineering construction's total involves \$263,116,000 for dams, drainage, earthwork and airports, \$141,540,000 for sewer and water work and \$109,778,000 for government electric projects. All represent increases. The rise in dams, drainage and earthwork, as well as airports, was sixty-four per cent. Sewer and water work is up thirteen per cent. Government electric projects were also more active with a rise of twenty-three per cent in value as compared with the 1949 figure.

December's \$637,532,000, which is twelve per cent of the 1950 total value for southern construction, embraced \$332,080,000 for public building, \$130,388,000 for private building, \$64,971,000 for highways and bridges, \$58,545,000 for engineering construction and \$51,548,000 for industrial work.

The twelfth-month total was swelled to

SOUTH'S CONSTRUCTION BY STATES

	December, 1950	Contracts to be Awarded	Contracts Awarded Twelve Months 1950	Contracts Awarded Twelve Months 1949
Alabama	\$19,524,000	\$25,129,000	\$177,335,000	\$89,675,000
Arkansas	536,000	19,479,000	137,098,000	70,427,000
District of Columbia	336,000	1,872,000	46,965,000	61,761,000
Florida	39,587,000	27,941,000	405,369,000	248,862,000
Georgia	15,576,000	22,804,000	156,703,000	120,757,000
Kentucky	2,707,000	40,136,000	97,448,000	92,835,000
Louisiana	25,377,000	28,247,000	347,533,000	259,608,000
Maryland	35,853,000	47,608,000	337,729,000	310,046,000
Mississippi	5,906,000	15,784,000	125,955,000	107,775,000
Missouri	11,946,000	37,749,000	237,080,000	132,592,000
North Carolina	27,965,000	49,497,000	364,940,000	196,597,000
Oklahoma	7,177,000	33,710,000	129,240,000	94,263,000
South Carolina	274,765,000	19,603,000	384,389,000	106,083,000
Tennessee	43,595,000	280,857,000	250,148,000	388,665,000
Texas	85,217,000	86,831,000	893,673,000	777,649,000
Virginia	26,368,000	43,285,000	250,675,000	113,952,000
West Virginia	15,127,000	46,026,000	37,541,000	33,474,000
TOTAL	\$637,532,000	\$826,558,000	\$4,369,152,000	\$3,205,021,000

its large proportion by the hydrogen bomb component plant which is to be established in South Carolina by the Atomic Energy Commission. This will involve expenditure of \$260,000,000. Not included in the figure because of its announcement late in the month was the other multi-million dollar project to be constructed in Kentucky.

Public building, because of the atomic energy commission project, formed fifty-two per cent of the December total. Other government building amounted to \$37,270,000. School projects recorded in December amounted to \$34,810,000, this a slight increase from the value placed on such work in the preceding month.

Elements in the \$130,388,000 private building figure were \$80,632,000 for residential construction, \$27,249,000 for office building, \$12,838,000 for commercial building and \$9,669,000 for assembly building.

Residential construction, a rise of sixty-six per cent from the value of work in the preceding month, represents sixty-one per cent of the private building total.

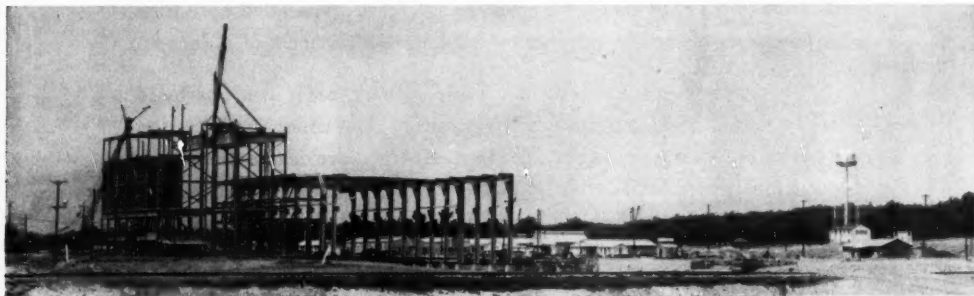
Increases in other types were: Assembly, ten per cent; commercial, seventy-three per cent; office, one hundred one per cent.

Highway and bridge projects increased in value in December, when compared with the total for the prior month. The \$64,971,000 showed a twenty-six per cent rise. Texas and Florida were at the top of the list—the one with an \$18,942,000 total and the other with \$17,012,000. An eleven million dollar bridge at Jacksonville helped swell the Florida total.

Industrial construction dropped to \$51,548,000, from the \$111,323,000 in November. Value of such work in December of 1949 was \$200,160,000.

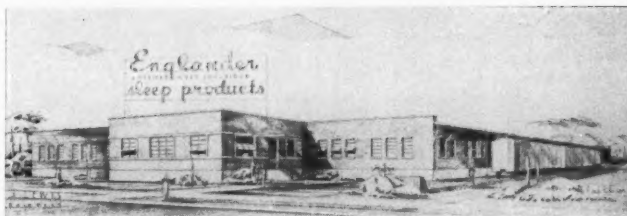
Heavy engineering construction, total \$58,545,000, included \$39,903,000 for dams, drainage, earthwork and airports, \$13,776,000 for sewer and water work and \$4,866,000 for government electric projects. The total shows a ninety-six per cent increase. Rises in the three categories are one hundred twenty-three per cent, forty-eight per cent and seventy-six per cent, respectively.

(Continued on page 32)



Above—Steel frame for the big steam plant being erected at Johnsonville, Tenn., by the Tennessee Valley Authority. It will have four units with a generating capacity of 450,000 kilowatts.

Right—Mattress plant built at Birmingham, Ala., by Englander Mattress Co. Miller, Martin & Lewis are the architects.





Preparedness

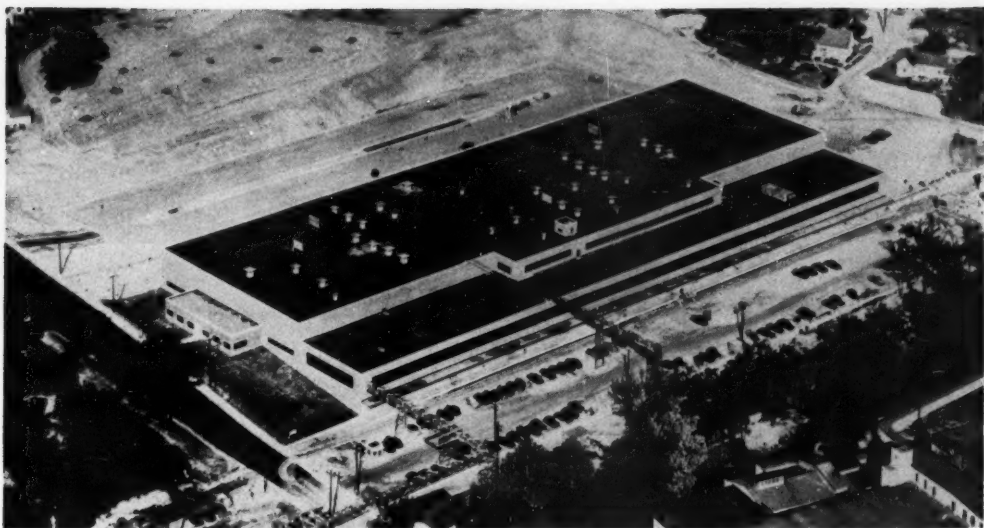
In these times of stress and uncertainty it is only natural for executives, in the construction industry as well as in all other lines of business endeavor, to feel that perhaps they should adopt a policy of sitting tight to await developments.

The construction organization which adheres to such a policy as an approach to the future, however, is extremely likely to find itself out in the cold. True, the world is in a state of turmoil. True, the present Administration has seemed as confused as a duck out of water. Nevertheless, the one salient point on which there is unanimous agreement is that plenty must be done, and that a fast start must be made.

Senator Robert A. Taft of Ohio, a man who will have an ever-increasing voice in the shaping of federal policy, has given us our first clear indication of the road ahead. He envisions a defense preparedness program not in terms of months or of years, but lasting a minimum of a decade.

In such a program construction, basic industry that it is, will perforce play a role of great importance. The increased plant capacity, the added airfields and camps, and above all the roads which provide the vital communications and traffic links without which any defense establishment could not exist—responsibility for all this will be placed upon the shoulders of the construction industry.

The facilities for such construction must be kept at peak efficiency, and must be ready to expand at a moment's notice. This is more than a business necessity; it is a patriotic duty.



Above—Gregg finishing plant built at Graniteville, S. C., cost \$3,500,000, Daniel Construction Co., contractor.

Southern Textile Construction Strikes Amazing Expansion Pace

By
Henry Lesesne

On a spindle basis it costs a good many times more to build a textile plant in the South today than it did at the turn of the century, or when the South was experiencing its first waves of industrialization. But the great expansion which has swept the textile South in the postwar years is gaining momentum rather than slackening as the first half of the twentieth century ends.

So many immense, multi-million-dollar textile plants have gone up in the South, are now in the process of construction or are being blueprinted for the months ahead, that it would hardly be feasible to list all of them within the confines of a single article. And it would be hard to find a cotton mill or any other textile mill in the South today which has not undergone a great amount of modernization, with often some physical expansion.

Estimates indicate the textile industry has spent over a billion dollars in plant modernization, replacement of overage machinery and plant expansion or streamlining.

Postwar textile mills and the giant plants turning out synthetic fibers and yarns are making the Piedmont a show-place of modern industry. The new mills are actually stimulating to the landscape and bear little or no resemblance to the cotton mill of even a decade ago. They are architectural exhibits of a new industrial age which is stressing the aesthetic in factory appearance. Often they are locating away from heavily industrialized areas, in beautiful rural settings.

The old four and five-story cotton mill, with a maze of shafting, pulleys and belting, is giving way to the smooth, streamlined, windowless, air-conditioned, one-story structure, with all the machinery

driven by individual motors. Few of the postwar mills have a textile village as an adjunct, although housing may be built for a few key personnel. The trend for a decade or more has been away from the old mill village, with many mills selling the company houses to employees.

Migration of the textile industry from New England to the South has had a relatively inconspicuous place in the industrial expansion of the Piedmont in the

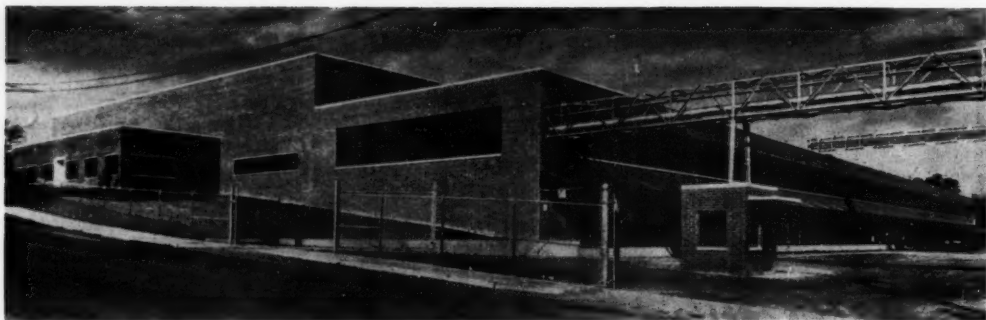
postwar era. The bulk of the expansion has been made by companies which are southern-operated or which have already been long established in the South—Spartan, Deering-Milliken, Greenwood Mills, Graniteville, J. P. Stevens, Burlington, and almost all the big chemical companies manufacturing synthetic fibers and yarns.

In the last two decades completely new cotton mills have been few, although a

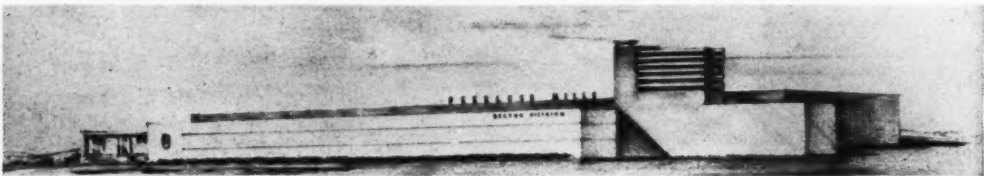
(Continued on page 12)

Below—DuPont Company's new "Orlon" acrylic fibre plant at Camden, S. C.





Above—Elevation view of giant finishing plant at Graniteville. Below—\$2,000,000 rayon weaving mill being erected at Belton, S. C., by Peerless Mills. The plant will contain 90,000 square feet.



Southern Textile Construction Strikes Amazing Pace

(Continued from page 11)

number of the integrated organizations have built new finishing plants with continuous, straight-line production. Most of the new textile mills in the South in the postwar years have been synthetic or woolen mills.

One notable exception to this, however, is the 40,000 spindle cotton mill at Lancaster, S. C., built by the Springs Cotton Mills which also in the same period has built the \$15,000,000 Grace bleachery at Lancaster. The new Springs mill is windowless and air-conditioned and is as modern as any of the dozens of new rayon, woolen and nylon mills. Another is the \$4 million plant Maverick Mills is erecting in Greenville, S. C., for manufacture of fine combed fabrics.

Most significant development in textiles in the last few years has been the increase in the number of woolen mills in the Southeast, and the relatively large number of finishing plants built or projected. These are indicative of the current wide diversification in the Southern industry.

The Graniteville Company recently opened an ultra-modern, \$10,000,000 dyeing and finishing plant at Graniteville,

S. C. Clearwater Finishing Co., a subsidiary of United Merchants and Manufacturers, is planning a multi-million-dollar finishing plant not far from Union, S. C. Another multi-million-dollar finishing plant will get underway soon near Seneca, S. C., for Utica-Mohawk.

Dan River Mills is building a new \$3,500,000 plant to adjoin Mill No. 5 at Danville, Va. The building is to be used for an expansion of cotton finishing and for storage of finished goods. This plant, however, is not to be confused with a contemplated rayon dyeing and finishing plant which may be built soon by Dan River in another state.

The modern new Delta finishing plant, a division of J. P. Stevens, has recently been completed at Kollocks, S. C. Containing 200,000 square feet of floor space, it is used in finishing rayons. A beam and package dye plant is being constructed at Plant No. 3 of Republic Mills, another J. P. Stevens unit, at Great Falls, S. C.

Robbins Mills, Inc., is starting construction on a rayon weaving plant at Raeford, N. C., to cost about \$7,500,000. Duplan Corporation, which in the postwar period has built a magnificent aluminum-walled nylon throwing plant in Winston-Salem, N. C., has under construction a

large plant at Burnsville, N. C.

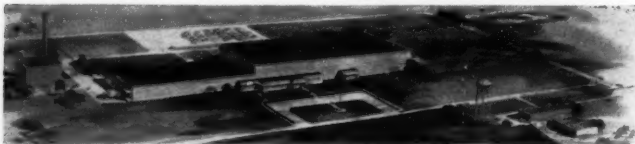
Deering-Milliken is building a \$12,000,000 woolen mill at Columbus, N. C. It will manufacture raw stock dyed woollens primarily for the dress and sportswear trades. The same company is building a \$1,000,000 rayon weaving plant at Thomson, Ga. A large tricot knitting mill is being built in Fountain Inn, S. C., by Fairchild Mills.

Greenwood Mills as part of a \$21,000,000 expansion and modernization program, has completed a \$6,000,000 rayon weaving mill at Harris, S. C., and has plans to build another rayon plant. Reversing the usual trend, a complete village is being built at the Harris plant which is probably the most beautiful industrial housing development in the country.

Work is starting on a 500-loom synthetic weaving plant near Honea Path, S. C., by Westover Mills. Woonsocket Falls Mills of Woonsocket, R. I., is building a single level plant of brick, steel and concrete at Wilmington, N. C., for the manufacture of pile fabrics, estimated cost \$3,500,000. Peerless Mills Co. of Pawtucket, R. I., which stopped its Rhode Island operations a year ago and liquidated its old plant, is building a \$2,000,000 plant of 900 looms for weaving of synthetics near Belton, S. C.

These are the high spots in new mill construction. However, in every part of the textile South, major expansion projects are also under way. Textron Southern, for instance, is building a \$1,000,000 addition to its print cloth plant at Williamston, S. C. Deering-Milliken finishing plant situated between Pendleton and Clemson, S. C., is undergoing a million-dollar expansion. This plant is also to house the entire research and laboratory

Below—Aerial perspective of finishing plant being erected at Kollock, S. C. by Delta finishing division of J. P. Stevens & Co.





Above—Fairview Mills new \$2,000,000 tricot knitting, dyeing and finishing plant at Fountain Inn, S. C.

and administrative units of Deering-Milliken, moved from Greenwich, Conn.

The U. S. Rubber Co. has recently opened a new \$250,000 textile research and development laboratory at Winnsboro Mills in Winnsboro, S. C., which is the center now of all the company's textile research and development work, except research on asbestos products, which continues at Hogansville, Ga., where U. S. Rubber's asbestos textile plant is situated.

Sizable expansion projects, in excess of a million dollars, are under way at Tectron's Toxaway mill at Anderson, S. C., and the Victor-Monaghan plant at Greer, S. C. An expansion program at the American Thread Co.'s Clover, S. C., plant will increase production capacity by 30 per cent. Limestone Manufacturing Co. at Gaffney, S. C., is erecting a \$1,200,000 wing at its No. 2 plant.

The extensive modernization, face-lifting and physical expansion that has been and is going on in the Southern textile industry—about 75 per cent of the cotton textile industry is now situated in the Southeast—has not been confined alone to manufacturing plants, but to all mill property. Traditionally, the textile industry has pioneered in recreational facilities for its employees, and the postwar period has seen any number of magnificent swimming pools, summer camps, athletic plants and community buildings go up in mill towns, often costing several hundred thousand dollars.

All the textile manufacturing states of the Southeast have shared to varying extent in this industrial bonanza, but the lion's share has gone to the Piedmont area of the Carolinas, the textile center of the nation. In South Carolina alone, according to the State Research, Planning and Development Board, plants with a capital value of \$303,700,000 have been established since January 1, 1945.

Another \$208,500,000 of capital is represented in expansion programs planned, underway or completed, making a total of over a half billion dollars attracted to the state in five years and adding over 70,000 people to the state's industrial payroll.

Presently there is a great amount of construction planned in the synthetic fiber industry, which is centered in the South or, more accurately, the Mid-South. Orlon, a teammate of nylon, is being manufactured in Du Pont's new \$15,000,000 plant near Camden, S. C. Nearby, another unit, twice as large, is under construction for the production of orlon in staple form.

Du Pont has announced a big new nylon plant will be built near Kinston, N. C., cost \$25,000,000. The company has purchased over 900 acres on the Pee Dee River, 11 miles from Florence, probably for a plant site.

Recently plans have been announced for a multi-million-dollar plant near Decatur, Ala., for the manufacture of a new synthetic fiber for the Chemstrand Corp., jointly owned by American Viscose Corp. and Monsanto Chemical Co. The new acrylonitrile-type fiber so far has been produced only in laboratory quantities.

The story of the synthetic fiber and yarn industry has been one of steady growth and expansion since the 1920's. In this industry capital funds for research and construction are enormous. For example, \$40,000,000 went into the construction and equipment of the Celanese Corporation of America's Celriver plant near Rock Hill, S. C., which began production in the final quarter of 1948.

Because of the favorable atmosphere found in the South for new industry, it is expected that the region will continue for some years to come into dominance in nearly all branches of textiles and related industries. Concentration of these industries in the South is due to adequate labor, tremendous quantities of water, large plant sites, good transportation fa-

cilities, and proximity to basic raw materials, required chemicals, fuel and customers.

The fact that the big synthetic fiber plants are nearly all locating in the South is compensating the region to a great extent for the loss of cotton to synthetics. Even the so-called "Deep South" is sharing. Near historic Natchez, Miss., for instance, the new \$20,000,000 rayon pulp plant of International Paper Co. is now in production. The plant, first part of a contemplated \$60,000,000 project, is employing a new process for dissolving wood pulp used in the manufacture of rayon and other synthetics.

John A. McPherson, Sr., president of the McPherson Co., textile engineering firm of Greenville, S. C., recently estimated that cost of textile plants has increased over 70 per cent.

He points out, for instance, that a complete 20,000-spindle print cloth mill, including a mill village, cost less than \$20 per spindle in 1900. Today, he says, the same mill, without the village, would cost over \$140 per spindle. This is but one change to the industry in recent decades, resulting in totally new processes, shorter hours and better working conditions for operatives, and wage rates which have increased percentage-wise more than they have in any comparable industry.

ASME Plans Study of Mill Modernization

To cope with rising costs and the growing threat of foreign competition to the textile industry, the textile division of The American Society of Mechanical Engineers has begun a point-by-point analysis of the basic elements of mill operation with the main objectives of reducing operating costs and improving product quality.

The analysis will be essentially a study of the methods employed in the establishment of woolen and worsted plants in the newly developed areas especially the South. These plants have proved their ability to produce a full range of fabrics on an entirely competitive quality basis and at lower manufacturing costs than those currently obtainable in New England.

According to Leslie A. Runton, manager of the engineering department of M. T. Stevens & Sons Co., North Andover, Mass., the studies will be conducted by the best engineering talent available in the field. Mr. Runton revealed the project

at the recent meeting of the ASME. He said the findings of the engineers will be presented in a series of integrated papers to be read at ASME meetings and thus will be available to the entire textile industry.

Mr. Runton said six major considerations upon which any textile mill operation is based, will be analyzed. He said reduction of operating costs will be studied through each of the considerations, plant, plant layout, machinery, labor, quality, operational.

"It is our intention to take one consideration at a time, and to focus our entire attention on the various factors which comprise it," he said. "By delving into the principles underlying each of these factors, we hope to be able to bring out specific points upon which modernization decisions can be based.

"Progressively we shall try to cover, meeting by meeting, and paper by paper, the various parts of the subject, until we

(Continued on page 14)

Burlington to Expand Lakeside Plant

Plans for a large-scale expansion of Burlington Mills' Lakedale plant at Fayetteville, N. C., a unit of the company's Rayon Spinning Division, were recently announced by President J. C. Cowan, Jr.

The expansion will provide an entire new wing on the front of the present building. It will also include streamlining and "face-lifting" of the present building along with modernization of buildings, grounds and other facilities.

The program is the second to be undertaken by Burlington in the Fayetteville area in recent months. Construction of an addition to Puritan Spun Weaving plant was begun in February and is now nearly half completed.

Construction on the Lakedale addition began shortly after the first of June, and is expected to be completed by the end of September.

Additional machinery will be moved in starting about the first of October and production in the new wing will be built up gradually as machinery is installed.

Cost of the entire program will be in excess of \$500,000. When completed it will provide for a substantial increase in production of synthetic yarns.

It also will mean the employment of a number of additional personnel to handle the new jobs created.

The new wing will be of brick construction, two stories in height, and will extend 160 feet from the front end of the building. It will be air-conditioned, with fluorescent lighting, and will house additional spindles as well as some other equipment to keep the plant's production in balance.

In announcing the expansion program for Lakedale, President Cowan pointed out the growing importance of Fayetteville as a textile manufacturing center and emphasized the great confidence Burlington has in the soundness of the community and its people.

"Last Fall we undertook a \$400,000

plant expansion and modernization program to extend over a three-year period," Mr. Cowan said. "A considerable share of this \$400,000 is being spent in the Fayetteville area. Work was begun several months ago on enlarging and modernizing the Puritan spun weaving plant. The Lakedale expansion is our second major project in this area this year.

"As part of this modernization work both these plants will be given a complete face-lifting—modernistic, streamlined exteriors that will make them among the handsomest textile plants in the southeast."

Built in 1907 with local capital, Lakedale operated as the Victory Manufacturing Company until 1933 when it was acquired by a group headed by R. L. Huffines, Jr., now president of Burlington Mills Corporation of New York. Originally it was equipped with 230 looms and 15,000 spindles turning out print cloth.

In 1933 it was converted into a spinning mill and the name changed to Fayette. In 1941 Burlington bought the mill and equipment and began a long-range program of re-equipping and revamping the plant to manufacture high quality yarns for weaving mills in the Burlington group.

Lakedale currently employs more than 475 persons and has an annual payroll of approximately one million dollars.

It is one of seven plants in Burlington's Rayon Spinning Division which is headed by Arthur L. Burnet of Greensboro.

John Henry is superintendent of the Lakedale plant and Olin Shedd is Group Manager of Burlington's Rayon Spinning Plants in the Fayetteville-St. Paul's area and at Oxford, N. C.

Southeastern Construction Co. were contractors for the job and Biberstein and Bowles, the architects. Work was done under supervision of Burlington's engineering department headed by J. L. Frink.

the field of labor and the import of low-cost textiles from soft-currency countries is a factor beyond the control of the mill operator.

"One course alone seems to be open to the textile manufacturer. This is to scrutinize every detail of mill operation and, wherever possible, to make such changes as may be indicated to increase production at the lowest level of cost. Competition within our own country is going to continually increase. This would naturally follow, since there will be a continuing struggle for the business available. In blunt terms, the trend indicates that the 'marginal' textile mill, or, in other words, the mill operating just slightly above the break-even point, may be forced out of business. The ASME wants to show what it considers a possible solution to the problems confronting a 'marginal' textile mill.

"By applying the engineering approach to the problem of mill operation, it will be possible to spotlight existing weaknesses and develop corrective measures.

It should not be inferred that this approach is necessarily one of replacing all old equipment with new. The study may reveal certain outmoded machines, but there will undoubtedly be many units of perfectly serviceable equipment which can continue to serve usefully."

Mr. Runton stated that in view of the engineering talent behind the movement, it is hoped that it will be possible to start an active trend of new thought within the industry itself.

"Modernization," he said, has been going on for years at a steady pace and will doubtless continue to do so as human progress is evident. However, he declared, it is the rate of modernization which concerns the ASME today.

"A broad result, from the standpoint of the consumer, may be a new concept of quality, engendered by advances of the industry itself," declared Mr. Runton. "This improvement of quality will not only raise our standard of living, but should do much to protect our industry from the inroads of lower quality foreign competition. In its very broadest sense, this should bring about a gradual increase in the obsolescence rate of textile machinery so that replacements are in increasing demand. An increase in the textile obsolescence rate would in itself be a tremendous stimulus to the textile industry."

Crabb Plant Under Way

Construction of a \$350,000 plant for the manufacture of pins and lags used in textile making is nearing completion on U.S. Highway 70 near Swannanoa, N. C., by William Crabb and Co. of Newark, N. J.

J. C. Bennett, president of the concern, has announced that the company's Newark plant will be moved to the new home when it is completed.

Designed by the firm of Six Associates, Inc., Asheville architects, the new building is being erected by H. Southworth Company, Asheville contractors.

The structure will contain a floor space totaling 30,000 square feet and is situated on a 35-acre tract. It is 12 miles from Asheville on the south side of Highway 70 at the intersection of the Lytle Cove Road, near Swannanoa, N. C.

The new plant will be served by a spur of track from the Southern Railway's Asheville-Salisbury line.

The concern will install new equipment at the Swannanoa plant that will be capable of heat-treating almost any normal sized article, either stainless steel or otherwise, that would be needed by the company or textile industries in the Southeast.

Included in the plant's new equipment will be a completely installed machine shop.

Referring to the latter Mr. Bennett said the shop will take care of the plant's every need and possibly will have time to spare to take care of the mechanical troubles of the industry in the Southeast.

He said the company will install five cranes in different parts of the plant for the unloading of heavy-complicated pieces.

Mill Modernization Studied

(Continued from page 13)

have run the full range. It will be of the greatest importance to obtain papers, suggestions and criticisms from thoughtful mill men who are well versed in their fields. If such an end can be attained, we feel that this program will have served a most useful cause for the entire textile industry."

The papers, Mr. Runton said, will provide material for mill men to compare their own situation and set-up with those which are more modern and be guided in the development of corrective steps whenever conditions warrant. The industry, he said, is faced today with a serious challenge.

"Material costs have risen, labor costs continue to make inroads on potential profits, and the threat of foreign competition is becoming increasingly sharpened," he declared. "It is clear that very little can be done about the cost of materials, a continuous struggle exists in

Southern Construction Projects

ALABAMA

ALABAMA—Bureau of Public Roads, Washington, D. C., announced state will receive \$3,738,880 on Federal-Aid highway system and \$2,903,455 on Secondary or Federal roads and \$1,286,166 on urban highways.

ANDALUSIA—City Board of Education let contract to Waller-Barnes Construction Co., \$115,292 for three school buildings.

ANNISTON—City Board of Education plans addition to school, \$250,000.

AUBURN—Alabama Polytechnic Institute let contract to S. J. Curry, Albany, Ga., \$874,300 for men's dormitory.

BAY MINETTE—City let contract to M. G. Aldridge, Macon, \$157,478 for improvements to water works.

BIRMINGHAM—Dairy Products Co. plans office and warehouse, \$150,000.

BIRMINGHAM—Loveman Joseph & Loeb received low bid from Brice Building Co., \$458,538 for warehouse.

BIRMINGHAM—Southern Natural Gas Co. plans 17,500,000 pipelines.

BIRMINGHAM—Westinghouse Electric Corp. received low bid from Daniel Construction Co., Inc., of Alabama, \$518,852 for plant buildings.

BIRMINGHAM—White Homes, Inc. will construct 24 unit apartment, \$475,000.

BIRMINGHAM—Housing Authority received low bid from G. A. Paul Construction Co., \$4,034,902, for 500 unit housing project, Marks Village, Ala.

BREWTON—T. R. Mirie Mill Co. plans \$750,000 wirebound box plant.

ENSLEY—P. G. Shook, Jr., will construct 3 dwellings, \$116,700.

FAIRFIELD—First Methodist Church Congregation received low bid from R. J. Allen Contracting Co., Birmingham, \$219,863, for education building.

GADSDEN—Housing Authority let contract to J. F. Holley, Birmingham, \$1,289,000, for Carver Village, colored, low rent housing project.

GADSDEN—Housing Authority received low bid from Sullivan, Long & Hagerty, Birmingham, \$1,824,000 for 220 unit Emma Sanson Homes.

GANTT—Alabama Electric Cooperative, Inc., will spend \$3,600,000 for new 15,000 kilowatt generating plant at Gantt in Covington County.

HUNTSVILLE—Housing Authority received low bid from Sullivan, Long & Hagerty, Birmingham, \$1,477,000 for 170 unit housing project.

INDIAN SPRINGS—Woodward Estate received low bid from Brice Building Co., Birmingham, \$464,627 for schools.

MOBILE—City Waterworks Board received low bid from Dozier Brothers Construction Co., Mt. Meigs, \$297,600 for clearing reservoir, Big Creek Water Supply Project.

MOBILE—McGill Institute received low bid from Peyton Higginson Co., Mobile, \$1,075,000 for school.

MOBILE—Southern Bell & Telephone & Telegraph Co., Atlanta, Ga., let contract to Robert and Long, for telephone building, \$175,000.

MONTGOMERY—State Highway Department received low bids for projects in following counties:

Monroe—Proj. FA-S-54(2), 4.403 mi. grad., drain, single surf. treat. and liq. d. seal on Drewry-Bermuda Rd.; Bennett Construction Co., \$88,547.

Washington—Proj. FA-S-471(1), 5.236 mi. grad., drain, and double surf. treat.; Goodwyn & Murphree, Box 388, Troy, \$95,749.

Houston—Proj. FACP-716-A, 4.232 mi. grad., drain, bitum. treat. and bridge culvert; B. F. Williams Construction Co., Ozark, \$56,343.

Autauga and Chilton—Proj. FGL-100(6), 1.074 mi. bridge and approaches on Montgomery-Birmingham Rd.; Baird & Latimer, Selma, \$102,424.

MONTGOMERY—Housing Authority received low bid from Bear Bros., Inc., \$1,663,000 for 216 unit low rent negro housing project, Victor Tulane Apts.

MONTGOMERY—Greyhound Bus Lines let contract to Brice Building Co., Birmingham, for bus terminal, \$127,000.

MONTEVALLO—Alabama College let contract to W. Motes & Son, Sylacauga, \$132,900 for swimming pool.

SELMA—Lockwood Hardware Manufacturing Co., Div. of Independent Lock Co.,

Fitchburg, Mass., plans \$1,000,000 branch plant.

SELMA—Housing Authority received low bid from Jones & Hardy, Montgomery, Ala., \$1,615,615, for 216 unit housing project, George Washington Carver Homes.

TUSCALOOSA—City Board of Education let contract to H. R. Coker, Sylacauga, \$116,568 for 32nd Avenue School and South-eastern Construction Co., Tuscaloosa, \$13,500 for kitchen at 20th St. Colored School.

ARKANSAS

ARKANSAS—Bureau of Public Roads, Washington, D. C., announced state will receive allocation of \$5,885,968 for Federal-Aid highway system, Secondary and urban roads.

CONWAY—City approved construction of 70-bed Memorial Hospital, \$580,000.

FAVETTEVILLE—Arkansas Electric Co-operative Corporation plans \$10,558,000 30,000 kilowatt system generating plant to be built near Ozark, 544 miles of 69 kv Transmission lines and 22 substations, \$10,558,000.

OSCEOLA—Crompton Co., Waynesboro, Va., plans \$2,000,000 textile finishing mill.

SHOEMAKER—Eighth Naval District, New Orleans, La., let contract to Farnsworth & Chambers Co., Inc., Houston, Tex., \$306,405 for rehabilitation and clearing of test range at Ammunition Depot.

DISTRICT OF COLUMBIA

ANACOSTIA—Navy Department, Public Works Office, Washington, received low bid from Waite Truland, Arlington, \$41,856 for replacement of fire alarm system Naval Air Station.

WASHINGTON—Public Buildings Service, General Services Administration, received low bid from Haughton Elevator Co., \$42,400 for elevator, Annex Bldg. 3, Government Printing Office.

WASHINGTON—Public Buildings Service, General Services Administration, received low bid from F. S. Bowe Electric Co., Bladensburg, Mo., \$45,900 for installing fire alarm system.

WASHINGTON—Public Buildings Service, General Services Administration, let contract to Joseph Bahen Construction Co., \$39,834 for repairs to public space, ceilings, etc., exhibition building, National Zoological Park.

WASHINGTON—District Commissioners received low bid from John Tester & Son, \$2,007,207 for Terrell Junior High School.

WASHINGTON—Public Buildings Service, General Services Administration, received low bid from MacBridges Corp., Sheboygan, Wisc., \$434,005 for fluorescent lighting fixtures.

FLORIDA

FLORIDA—State sold \$4,310,000 bond issue to B. J. Van Ingen Co., Inc., & Associates, for State University.

Bureau of Public Roads, Washington, D. C., announced state will receive \$2,815,321 for Federal-Aid highway system, \$1,333,933 for secondary roads and \$1,660,893 on Urban highways.

APOPKA—Orange County Board of Public Instruction, Orlando, received low bid from Mann Construction Co., Orlando, \$269,900 for junior elementary colored school.

DADE COUNTY—Dade County Board of Public Instruction let contract to C. F. Wheeler, \$287,193 for Bethune Elementary School for Colored.

DADE COUNTY—George and Charles Winston, Miami Beach, let contract to George Winston Construction Co., Miami Beach, \$150,000, for 50 unit 4-building Hotel, 18325 Collins Ave.

DAYTONA BEACH—Methodist Church Congregation received low bid from Security Construction Co., \$138,928, for church building.

DEFUNIAK SPRINGS—Walton County School Board plans \$800,000 school construction and improvements.

GAINESVILLE—City let contracts for sanitary sewerage facilities as follows: Contract A & B, Henry G. DuPre Co., Jacksonville, \$666,666; Contract C, J. B. McCarty Engineering Corp., Atlanta, Ga., \$152,921; Contract D, \$53,476; Smith and Gillespie, Jacksonville, Engra.

HIALEAH—Winn & Lovett Grocery Co. let contract to J. S. Stephens & Son, Tampa, for warehouse, \$427,251.

HIALEAH—Hialeah-Miami Springs Bank, Miami Springs, received low bid from Winters Construction Co., \$96,972, for bank building.

JACKSONVILLE—State Road Department let contracts to Bethlehem Steel Co., Bethlehem, Pa., \$7,376,712 for superstructure for Arlington Bridge across St. Johns River and Merritt-Chapman & Scott, New York, \$3,588,959 for substructure, in Duval County.

JACKSONVILLE—State Road Department received low bids for projects in following county:

Duval—State Proj. Job 7204-275-A, substructure of John E. Mathews bridge across St. Johns River at Arlington; Merritt-Chapman & Scott Corp., New York, \$3,533,959 and State Proj. Job 7204-275-B, superstructure for same bridge; Bethlehem Steel Co., Bethlehem, Pa., \$7,376,712.

JACKSONVILLE—Corps of Engineers received low bid from Smith Engineering & Construction Co., Pensacola, \$462,085, for strengthening 5 mi. section of Lake Okechobee levee between Clewiston and Lake Harbor.

KEY WEST—Monroe County Board of County Commissioners have plans completed for jail, \$140,000.

LAKELAND—Polk County Board of Public Instruction, Bartow, received low bid from C. A. Fielland, Inc., Tampa, \$144,000 for high school for colored.

MIAMI—Dade County Board of Public Instruction, Miami, let contract to Latimer Construction Co., Miami Beach, \$192,590 for addition to Miami Jackson High School.

MIAMI—Ro-Ed Corp. let contract to Paul R. Thomas, Inc., North Miami, for warehouse, \$98,000.

MIAMI—Mayflower Plumbing Supply Co.,

(Continued on page 16)

Below—Fleet of Allis-Chalmers HD-19's and Gar Wood scrapers owned by R. E. Latimer, of Washington, D. C., cut a street through a suburban development outside the Nation's Capital.



Southern Construction Projects

FLORIDA

(Continued from page 15)

Inc. let contract to Spector & Sons for warehouse and office building, \$100,000.

MIAMI—North Atlantic Contractors, Inc., Miami Beach, will construct warehouse, \$107,000.

MIAMI—City Commission let contract to H. M. Engelhart, \$193,800 for sidewalk improvements.

MIAMI BEACH—Dade County Board of Public Instruction, Miami, let contract to Zaret Construction Corp., \$141,862 for addition to Biscayne Elementary School.

MIAMI BEACH—Thomas Jefferson, Inc., let contract to Taylor Construction Company, Miami, for 133 room San Marino Hotel, \$800,000.

MIAMI BEACH—Jona Associates, Inc. let contract to George Kramer, Miami Beach, \$400,000, for 105 room "Johnna Hotel."

NORTH MIAMI—Dade County Board of Public Instruction let contract to Zaret Construction Corp., Miami Beach, \$758,841 for North Miami High School.

NORTH MIAMI BEACH—City plans water system, Project No. 4976, includes, water treatment facilities, \$100,000; water distribution system extensions, \$300,000; street paving, \$125,000 and miscellaneous work, \$100,000.

OCALA—Florida Telephone Corp. plans building, \$118,000.

PENSACOLA—Escambia County Board of Public Instruction, received low bid from Dyson Construction Co., \$823,800 for high school.

SANFORD—Housing Authority let contract to Bradford Builders, Inc., Miami Beach, for 125 unit Castle Brewer Court, housing project, \$1,041,999.

TAMPA—Housing Authority let contract to Setecase & Chillum, \$809,900, for 800

unit housing project, Lake Ave. & 22nd St.

TALLAHASSEE—State Road Department received low bids for projects in following counties:

Putnam—grad. and surf. Rd. 206 from east of Palatka 3.6 mi. northwest; B. B. McCormick & Sons, \$183,075.

Volusia—grad. and pavt. Rds. 600 and 15; W. L. Cobb Construction Co., \$287,548, in Tampa;

Sarasota—grad. and pavt. Rd. 782 between Rds. 45 & 72; J. W. Conner & Sons, \$159,530;

Lake and Marion—paving Rd. 19; J. D. Manly Construction Co., \$170,367;

Leon—widening and surf. 10-mi. stretch of Rd. 20; Faulk & Coleman, \$177,632;

St. Johns—surf. Rd. 206, 6 mi. westward from Rd. 13; Caddell & Jackson, \$64,033;

Broward—surf. Rd. A-A from State Rd. 5 to New River Sound along East Tas Olas Blvd. in Fort Lauderdale; Broward Asphalt Corp., \$53,766;

Monroe—reworking and widening Rd. 5; Troup Brothers, Inc., \$63,678;

Liberty—grad. and hard surf. Rd. S-379; R. H. Strickland, \$104,212;

Hendry—regard. and surf. Roads 80 and 25; John A. Benton Construction Co., \$271,737;

Walton—grad. and paving Rd. S-2 between Rd. 83 and Jackson's Still; A. B. Covell, \$104,512;

DeSoto—regarding and widening Rd. S-661; John A. Benton Construction Co., \$94,399;

Jackson—grad. and surf. hwy. and bridge on Rd. S-167; Beacon Supply Co., \$118,677;

Washington—hard surf. Rd. S-284; Coggin & Deermont, \$74,007;

Collier—grad. and hard surf. and curb and gutter on Rd. 29 in town of Everglades; Brinson Construction Co., \$88,990;

Pasco—reworking and widening Rd. 52 from Rd. S-581 to San Antonio; Cone Brothers Contracting Co., \$145,191;

Osceola—storm sewers on Rds. 15 and 500 in town of St. Cloud; R. H. Wright & Son, \$125,868;

Hillsborough—constructing and paving approaches and building 1216-ft. bridge on Rd. 45 across Alafia River; Cleary Brothers Construction Co., \$459,752;

Duval—paving approaches and bridge of 5 40-ft. spans and 7 60-ft. spans on Rd. 105 across Sister's Creek; Duval Engineering & Contracting Co., \$722,135;

Charlotte—conc. bridge 405-ft. long and approaches on Rd. S-771; Placidia; Hubbard Construction Co., \$89,317;

Holmes and Washington—reconstructing existing trusses on east portion of bridge on Rd. 10 across Chotawatchee River and 30-ft. conc. deck spans and 2-detour bridges and approaches; Goodwin & Murphy, \$383,927.

WINTER GARDEN—Orange County Board of Public Instruction received low bid from James I. Barnes Construction Co., \$240,000 for Charles R. Drew Junior High School.

GEORGIA

GEORGIA—Bureau of Public Roads, Washington, D. C., announced state will receive allocations of \$4,394,406 for Federal-Aid Highway systems, \$3,353,532 for Secondary of Federal roads and \$1,374,695 for urban highways.

ALBANY—Aljo Motel received low bid from A. C. Sanford, Inc., \$147,716, for motel.

AMERICUS—Housing Authority received low bid from E. A. Scott & Sons, Americus, \$1,128,971, for low rent housing project.

ATHENS—City & Clarke County received low bid from H. A. Parson, Athens, \$212,400 for Athens-Clarke County Health Center.

ATLANTA—Housing Authority plans 500 unit low rent housing project, \$5,000,000.

ATLANTA—Atlantic Steel Co. plans three-year expansion program; first phase will be the installation of a 60-ton electric furnace, \$1,500,000; second phase will be the addition of a new rolling mill.

ATLANTA—Coastal State Life Insurance Company plans building on site, \$750,000.

ATLANTA—State Highway Department received low bids for projects in following counties:

Clay—bridge over Patula Creek and approaches on Ft. Gaines-Georgetown Rd.; Leo T. Barber, Moultrie, \$58,000;

Telfair—bridge over Sugar Creek on McRae-Hazeburn Rd.; Ocmulgee Construction Co., McRae, \$123,934;

Columbia—bridge over Keg Creek and approaches on Lincolnton-Augusta Rd.; Weese

Kentucky Continues Record Road Program

"The year 1950 saw Kentucky continuing its record breaking road building program," announces Highway Commissioner John A. Keck.

During the year just ended 2,461 miles of highway and bridges were placed under contract at a total cost of \$36,722,730. This brings the total of the last three years to \$88,035,784 for 7,126 miles of highway construction.

Important in the 1950 road program was rural road construction. More money was spent on rural roads in 1950 than in any previous year in Kentucky's history, according to Emerson "Doc" Beauchamp, Commissioner of Rural Highways. \$9,990,487 was spent on 824 miles of rural construction, including eight bridges placed under contract. This brings the total amount spent since January 1, 1948 and financed by the 2-cent gas tax, to \$25,067,474 for 2,586 miles of road work.

"Road building is not just the job of putting on black top or laying concrete," Dwight Bray, Chief Engineer of the Department of Highways said recently. Each road is the product of months of planning, to integrate it with the other roads forming a system to serve the people best, not only today, but in years to come. A road must be designed, then constructed. If it crosses rivers or streams, bridges must be built. Every piece of material going into its construction is tested to be sure it meets the qualifications laid down by the Department of Highways.

All divisions reported progress in pace with the stepped up road program.

A. O. Neiser, Director of the Division of Design reported that 3,208 miles of roads had been designed in the year 1950.

Plans were approved and contracts were awarded for over 500 separate projects. Construction Director Cabell Owens stated. The 1950 construction program included work on a vast number of state and many federal highways including U. S. highways 25, 27, 42, 60, 68, 31W, and 421.

Rural Highways Director George H. Hailey said that 3,910 miles of rural highways had been resurfaced during 1950. One hundred miles of new grade was constructed and 8 bridges and 574 culverts.

A total of 17 major bridges were placed under contract during the year plus a large number of smaller structures and culverts, according to Bridge Engineer E. D. Smith.

Director of Materials John A. Bitterman reported that over 75,000 lab and field tests were run by his division including tests on steel, chemicals, soils, and bituminous materials.

During 1950, the Traffic Division installed 66,000 information, warning and regulatory signs, Director W. P. Ringo said. Stripping Crews placed center lines on 7,800 miles of roads and streets. Forty-five beacons, 27 fixed time signals, and 7 traffic actuated signals were installed during this period.

M. F. Johnson, director of maintenance, reports that road crews have continued working to repair the roads although the severe weather of the last two months has done serious damage.

Director of Equipment W. A. Tinchin reported that 418 units of equipment have been purchased within the last year. In addition to the equipment purchased to replace obsolete units, the large construction program has necessitated the purchase of equipment to maintain the 2,586 miles of new roads. A new emergency purchase procedure put into effect April 1, 1950 has expedited payment of outstanding bills M. W. Tindler, director of the Division of Records said. It has reduced the time needed to a minimum and has cut a great deal of red tape.

Veal Mann, director of the Division of Public Information reveals that over 50,000 requests for information on Kentucky's tourist attractions have been answered by that division.

R. E. Bagby, director of planning, reports that 22 counties in western Kentucky were completely reinventoried in preparation to the compilation of new maps, 17 new county maps were drafted. Twenty-six county traffic flow maps were compiled.

Loadometer stations were operated at ten stations where trucks were weighed to determine average weights of trucks, this information will be used in a study of the effects of trucks on highways.

and Weeks Construction Co., McCaysville, \$104,722;

Carroll—5.157 mi. grad., drain, and pvt. and 1 bridge on Carrollton-Hickory Level Rd.; Allgood Brothers, Hapeville, \$86,187;
Crisp—7.94 mi. grad., drain, and pvt. on Cordele-Drayton Rd.; Glen G. Searing, Jacksonville, Fla., \$77,340;

Heard—3.746 mi. grad., drain, and pvt. and 1 bridge on Franklin-LaGrange Rd.; W. L. Robinson Construction Co., College Park, \$77,054;

Henry—2.75 mi. grad., drain., widening and pvt. on Jackson-Atlanta Rd.; Ballenger Paving Co., Greenville, S. C., \$287,252;

Johnson and Emanuel—10.948 mi. pvt. on Kite-Adrain Rd.; Thomason Construction Co., Macon, \$94,519;

Lumpkin—4.3 mi. grad., drain, and resurf. on Dahlonega-Clermont Rd.; Allgood Brothers, Hapeville, \$57,747;

Macon—0.5 mi. grad., widening and 1 bridge on Oglethorpe-Hawkinsville Rd.; Walner Construction Co., Valdosta, \$147,813;

Miller—5.3 mi. grad., pvt. on Colquitt-Phillipsburg Rd.; J. B. Gibson Co., Donaldsonville, \$78,131;

Tift and Berrien—2.4 mi. grad. and pvt. and 1 bridge on Nashville-Tifton Rd.; H. G. Smith, Fitzgerald, \$65,314;

Twiggs—7.1 mi. grad. and pvt. on Jeffersonville-Taverneville Rd.; R. A. Bowen, Macon, \$66,053.

CEDEBARTOWN—Board of Commissioners of Roads and Revenue let contract to Bailey-Brazell Construction Co., Greenville, S. C., \$412,398 for courthouse and jail.

CHAMBLEE—J. I. Case Co., Racine, Wisc., plans \$500,000 office and parts warehouse, Peachtree Industrial Blvd.

COLUMBUS—Bealwood Baptist Church let contract to Teel Construction Co., \$122,343, for sanctuary.

COLUMBUS—Housing Authority received low bid from Williams Construction Co., \$2,520,000, for Luther C. Wilson Homes.

COLUMBUS—Housing Authority received low bid from Williams Construction Co., \$1,268,995, for Elizabeth F. Canty Homes.

DUBLIN—Board of Education let contracts for school facilities to the following: building Nos. 3 & 4, H & H Construction Co., Thomasville, \$150,900; building No. 5, Comer and Kimbrell, \$90,804.

EAST POINT—Housing Authority received low bid from Gilbert Beers, Atlanta, \$618,000 for housing project Ga. 78-1 & 78-2.

FITZGERALD—Housing Authority received low bid from William M. Crawford, \$584,000, for Ga. 70-1 & Ga. 70-2 low rent housing project.

FORT BENNING—U. S. Engineer Office, Mobile, Ala., let contract to T. H. Pearce & Co., Columbus, \$171,441 for rehabilitation of buildings and range.

GAINESVILLE—Housing Authority received low bid from T. C. Bateson, Dallas, Tex., \$2,417,600, for low rent housing project, Ga. 59-1 & 2.

JESUP—Housing Authority received low bid from Edward L. Powers Contracting Co., \$212,000, for low rent housing project.

MACON—Fickling, Walker and Briggs, let contract to A. R. Briggs, Jr., \$600,000 for apartment house, 363 New Street.

MOULTRIE—Housing Authority received low bid from Byck-Worrell Construction Co., Savannah, Ga., \$1,079,847.

SAVANNAH—Southland Oil Corporation, will construct separate docking facilities at Port for discharging liquid products in addition to those now proposed by Authority; \$5,000,000 to be spent developing berthing facilities and transit sheds; have petitioned United States Engineers for thirty-four foot channel and two-thousand foot turning basin on Savannah River; will install 7 storage tanks with combined capacity of 300,000 barrels, \$250,000.

SAVANNAH—Georgia State Port Authority received low bid from Espy Paving & Construction Co., \$1,791,639, for 2,065-ft. wharf.

WAYCROSS—Trinity Methodist Church Congregation received low bid from Paul H. Kesling, Waycross, \$113,961, for church and educational building.

WAYNESBORO—Housing Authority received low bid from Knox Construction Co., Thomson, \$508,254, for low rent housing project Ga. 86-1 & Ga. 86-2.

WEST POINT—City Board of Education received low bid from Newman Construction Co., LaGrange, \$216,600 for high school.

KENTUCKY

KENTUCKY—Bureau of Public Roads, Washington, D. C., announced state will receive allocations of \$3,245,485 for Federal-

(Continued on page 18)

Engineers Urged to Mobilize Skills

Prof. Thomas F. Hubbard, of the engineering department of Johns Hopkins University, and chairman of the Baltimore Commission on City Plan, last month was elected president of the Maryland section of the American Society of Civil Engineers, succeeding Paul G. Krout, who has headed the organization for the past year.

Other officers selected by the Maryland section, which has more than 500 members, were George Carter, deputy director of public works of Baltimore, who stepped into the vice presidency formerly held by Professor Hubbard, and Raymond Reigner, secretary, succeeding William R. Kahl. Four members—Ed Frost, H. W. Myers, Van Rensselaer P. Saxe and Samuel Thompson—were awarded life memberships.

The election preceded an address by Rear Admiral Joseph F. Jelley, head of the Bureau of Yards and Docks and chief of the civil engineer corps of the Navy Department, who urged the Maryland section to put its "human skills and abilities into action with the least possible delay."

"If we are to surpass the manpower of the Communist aggressors by the skill and quality of our manpower, the engineering profession must mobilize itself. Some call this a patriotic duty," the Admiral stated, but he chooses to call it "a patriotic privilege—the privilege of contributing initiative as well as knowledge."

The Navy has \$400,000,000 for shore construction, he said, but the work to be done and the munitions to be purchased are only contributory factors to an adequate defense. "Security for this country and the peace-loving nations of the world demands more than all our money and all our credit can buy," he declared, adding:

"It demands a rebirth of an almost forgotten idea; that our free institutions and the privileges we enjoy under them are worth real personal sacrifice. It cannot be discharged by paying taxes. And certainly you cannot delegate it entirely to those of us in uniform. Too often, the degree of our defense effort is judged by the number of digits after the dollar sign on military appropriations."

"The number of dollars spent on defense" Admiral Jelley termed a "yardstick by which one phase of the defense effort can be measured. We can buy lumber and bulldozers; we can hire engineers and contractors, but materials and services which must be purchased are not enough. Security can be achieved only by the effective employment of our defense capacity from all sources."

The quality of American manpower, if intelligently used, can and must tip the scales in our favor, he stated, but the "advantage in quality" must be more than a mere potential advantage. It must be an advantage in fact. "We must put our human skills and abilities into action with the least possible delay. We must do it without any budgeting or appropriations by Congress."

"Few professions are better qualified to



Paul G. Krout

contribute to the solution of the defense problem," Admiral Jelley observed, because "we are accustomed to defining the problem, in getting and checking the facts which relate to it and investigating to obtain the solution. This method of analysis and solution can be used for many of the non-engineering problems which confront us."

Answering the question "How can the engineering profession give the Armed Services the benefit of its knowledge," the Navy civil engineer head said the Society should set up a military liaison group of its leaders and representatives of the military services, this group to mobilize and direct the talent available on the technical division committees.

The goal of the Navy civil engineer corps, he stated, is to provide adequate shore support for the fleet with a minimum amount of equipment and material and with as few men as possible. Mobility is being developed; facilities are being

(Continued on page 32)

Admiral J. F. Jelley



Southern Construction Projects

KENTUCKY

(Continued from page 17)

Aid highway system, \$2,786,021 for secondary roads and \$1,023,047 for urban roads.

ASHLAND—Army Steel Corp. will spend \$153,992,406 for expansion; plans at Ashland include a new hot strip mill, and new processing equipment.

DANVILLE—General Shoe Corp. let contract to Harris & Wood, Danville, \$252,827 for new building.

DANVILLE—City let contract to Shely Construction Co., Lexington, \$60,260 for waterworks improvement.

LOUISVILLE—J. J. Newberry Co., New York City, plans store, \$1,250,000.

LOUISVILLE—Inman Construction Co. has contract for factory owned by Industrial Enterprises, \$50,000.

LOUISVILLE—J. Graham Brown plans 1.6 story addition to Martin Brown building, \$3,500,000.

LOUISVILLE—General Mills, Inc., Minneapolis, Minn., \$1,000,000 grain elevator and warehouse in Jefferson County.

PADUCAH—U. S. Atomic Energy Commission, Oak Ridge Tenn., let contract to F. H. McGraw and Co., Hartford, Conn., for all structures, including process buildings, supporting service facilities, and administrative building, and installing production equipment, new Uranium-235 production facility, on site of Kentucky Ordnance Plant, \$350,000,000.

LOUISIANA

LOUISIANA—Bureau of Public Roads, Washington, D. C., announced state will receive allocations of \$2,724,150 for Federal-Aid Highway system, \$1,997,042 for secondary or federal roads and \$317,195 for urban highways.

LOUISIANA—Natchitoches School Board, Natchitoches, let contract to Tudor Construction Co., Alexandria, \$711,697 for elementary school at Northwestern State College, new negro high school in Natchitoches and St. Matthew's Negro High School in Metairie.

ABBEVILLE—Vermilion Parish Police Jury let contract to Romero & Theall, Youngsville, \$830,000 for Courthouse.

ALEXANDRIA—City Council received low bid from W. R. Aldrich & Co., \$104,662, for Storm Drainage work.

ALEXANDRIA—City and Police Jury of Rapides Parish purchased site on MacArthur drive for Health Center, \$100,000.

ALEXANDRIA—Rapides Parish School District No. 9 plans \$150,000 bond issue for improving school building for whites and erecting and equipping school building for Negroes.

BATON ROUGE—Board of Supervisors of Louisiana State University let contract to Barksdale and LeBlanc, \$109,372, for additions and alterations to Foster Hall.

BATON ROUGE—Department of Highways let contracts for projects in following parishes:

Jackson and Lincoln—Bitum. surf. treat., 7 mi. on Rt. 17, Vernon-Ruston Hwy.; M. E. Pollard, Bossier City, \$154,498.

BATON ROUGE—Department of Highways received low bids for projects in following parishes:

Concordia—State Proj. 26-02-12, Fed. Aid Proj. F-39(5), Rt. 3, 1.983 mi. grad., drain, str., Portland cement conc. pvt., patching and widening existing conc. pvt. and bitum. surf. course; Forum-James Co., \$227,944.

Calcasieu—State Proj. 3-30-07, Fed. Aid Proj. U1-35(20), Rt. C-2109, 1.513 mi. grad., small drain, str., soil cement base course bitum. surf. treat.; W. R. Aldrich & Co., \$198,208.

Pointe Coupee—State Proj. 8-03-13, Rt. 7; T. L. James & Co., Inc., Ruston, \$256,680.

Jefferson—State Proj. 826-13-05, Rt. 460-D, 4.265 mi. grad., small drain, str., and Portland cement conc. pvt.; T. L. James & Co., Inc., \$312,340.

Jefferson—State Proj. 826-14-03, 826-16-01 & 826-17-01, Rts. 459 & 1232, 2.849 mi. grad., soil cement base course bitum. surf.; Forum-James Co., \$70,322.

La Salle—State Proj. 830-15-02, 149-04-05, Rt. 57 & C-2184, grad., and shaping road, way, small drain, str., grav. base course, or as alternate, soil cement base course and bitum. surf. treat.; Henry & Hall, Dubach, \$124,788.

Orleans and Jefferson—Proj. 410-01-06 & 410-02-05, Rt. 31, shaping shoulders, aggr.

type base course and bitum. surf. treat.; LeBlanc Brothers, \$142,660.

Bienvenue—Proj. 89-04-09, Rt. 12, 6.083 mi. grad., large drain, str., reinf. conc. deck girder bridge, grav. base course, or as alternate, soil cement base course, or crushed stone base course and 3-application bitum. surf. treat.; T. L. James & Co., Inc., Ruston, \$253,515.

Winn—State Proj. 23-05-08, Rt. 5, 0.229 mi. 3 reinf. conc. box culverts, 4 conc. slab span bridges, grad. and conc. pvt. approaches; Newman Brothers & J. W. Snowden, \$189,528.

Pointe Coupee—Proj. 8-03-13, 2.079 mi. grad. and Portland cement conc. pvt.; T. L. James & Co., Inc., Ruston, \$269,131.

East Baton Rouge and West Baton Rouge—State Proj. 7-10-08, Rt. C-1500, cleaning and painting bridge steel; Courtney-Weich-Brink Co., Inc., Houston, Texas, \$553,231.

BATON ROUGE—Department of Highways let contract to C. W. Nussbaum Electric Co., \$197,500 for electrical repairs to Rigolets at Chef Menteur bridges.

BATON ROUGE—Ideal Cement Co., Denver, plans \$4,000,000 plant.

CHURCH POINT—Housing Authority plans 100 unit low cost housing project, \$850,000.

DENHAM SPRINGS—Livingston Parish School Board, Livingston, received low bid from A. B. Broussard, Sr., Baton Rouge, \$223,473 for high school.

DOYALSONVILLE—Ascension parish school board plans school improvements, \$508,000.

FRANKLIN—Board of Commissioners of Hospital Service District No. 1 of St. Mary Parish plans \$225,000 bond issue for hospital.

FRANKLINTON—Washington Parish School Board plans school construction, \$757,000.

JONESVILLE—Mayor and Board of Aldermen let contract to T. L. James & Co., Inc., \$104,181, for bitum. asp. pvt. and conc. curbs and gutter on various streets.

LAKE CHARLES—Calcasieu Parish Police

Jury plans administration building, Lake Charles Airport, \$100,000.

MONROE—City Council let contract to Sullivan, Long & Hagerly, Bessemer, Ala., \$485,945 for sewer improvements.

NEW ORLEANS—Georgian, Inc., let contract to R. P. Farnsworth Co., Inc., for apartment on St. Charles Ave., \$1,249,000.

NEW ORLEANS—Tulane University let contract to R. P. Farnsworth & Co., Inc., \$466,413 for men's residence.

NEW ORLEANS—Dr. Howard Mahorner received low bid from Bartley & Binnings, \$124,848 for two-story Doctors' Office Building.

NEW ORLEANS—New Orleans Union Passenger Terminal Committee let contract to Lionel F. Favret, \$815,706, for 5,000-ft. permanent conc. platforms and 4,000 ft. steel canopies for proposed Union Station.

NEW ORLEANS—Fromherz Engineers plan underpass, Canal Boulevard and Home-dale Ave., \$1,250,000.

NEW ORLEANS—City Council let contracts for following projects:

Proposal No. 15,879—widening of Carrollton Ave.; Boh Brothers Construction Co., \$96,859.

Proposal No. 15,880—widening of City Park Ave.; Boh Brothers Construction Co., \$150,854.

Proposal No. 15,831—widening of LaSalle St.; Boh Brothers Construction Co., \$58,180.

Proposal No. 15,882—widening of Louisiana Ave.; Boh Brothers Construction Co., \$126,245.

Proposal No. 15,883—widening of St. Bernard Ave.; Boh Brothers Construction Co., \$120,162.

NEW ORLEANS—City Council let contract to R. P. Farnsworth & Co., Inc., \$798,366 on Proposal No. 15,733 for new underpass and appurtenant work, .212 mi. on S. Carrollton Ave. at Gravier St. under Union Passenger Terminal tracks.

NEW ROADS—Corps of Engineers, New Orleans, let contract to Avondale Marine

(Continued on page 20)

Merritt-Chapman, Scott Gets St. Regis Contract

St. Regis Paper Co. announces that Merritt-Chapman & Scott Corporation, New York, has been awarded the general construction contract for the recently announced expansion program in Florida.

Plans call for the early construction and installation of two kraft paper machines and pulp manufacturing facilities, one of which will be added to the company's "Kraft Center" at Pensacola, and the other in a new mill to be built at Jacksonville.

Merritt-Chapman & Scott Corp., active in a wide field of industrial, building, marine and heavy construction, has to its credit a long history of paper mill construction. It has been closely identified with the growth of the pulp and paper industry in the South, including construction of the paper mill and multiwall bag plant completed in 1948 which forms part of the St. Regis Kraft Center at Pensacola.

The new St. Regis projects will be under the direction of Myles C. McGough, vice president of the company's Industrial and Building Construction Division, with A. A. Johnson serving as New York project manager. T. W. Wommack will serve as Merritt-Chapman & Scott project manager at Pensacola and W. Hohenhausen will serve in similar capacity at Jacksonville.

The order for the new paper machine at Pensacola has been placed with the

Bagley & Sewall Co., Watertown, N. Y., and will be designed to produce specification multiwall kraft paper. The machine will be 228 inches wide and will be designed for an ultimate speed up to 2500 feet a minute.

The paper machine for the Jacksonville mill, which has been ordered from the Beloit Iron Works, Beloit, Wisc., will be 230 inches wide and will also be designed for an ultimate speed up to 2500 feet a minute.

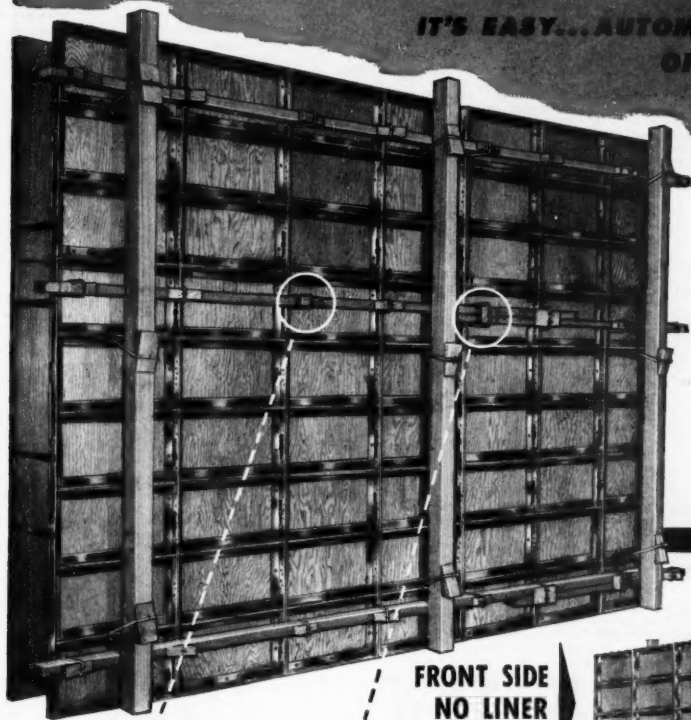
The two new paper machines, with a capacity of approximately 200,000 tons of kraft paper a year, will supplement St. Regis' present Southern capacity at Pensacola for making kraft paper and board and will be fully integrated with pulp manufactured from wood from the company's owned and leased woodlands.

Work has started on the foundations for the new installation at Pensacola and a start on the new Jacksonville mill is expected to be made early in 1951. The site for the new mill at Jacksonville is well located in relation to the company's wood resources in the Suwanee Forest in Georgia.

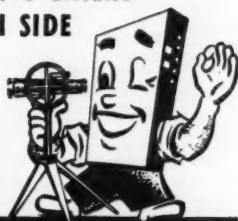
The plans of the company for the Jacksonville mill call for a substantial expenditure for installation of the most modern developments in devices and equipment to eliminate or reduce to a minimum air pollution, odors and stream pollution.

NO ALIGNMENT PROBLEMS WITH UNI-FORMS!

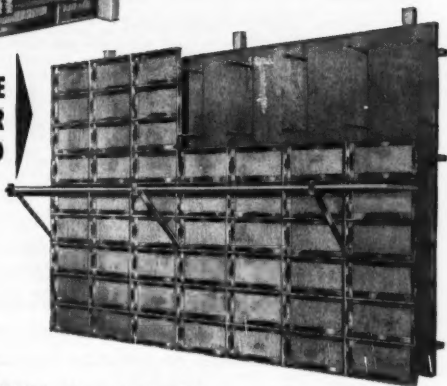
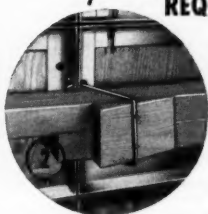
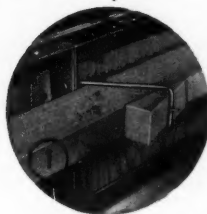
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Southern Construction Projects

LOUISIANA

(Continued from page 18)

WAYS, INC.—Westwego, \$937,260, for 127 sets of steel gates for Morganza Floodway control structure.

OAKDALE—Housing Authority plans 200 unit low cost housing project; \$1,500,000.

RAYVILLE—Methodist Church Congregation received low bid from E. E. Armbrust, North Little Rock, Ark., \$111,000, for church building.

ST. CHARLES PARISH—Board of Commissioners of St. Charles Parish Waterworks District No. 1, New Sarpy, let contract to Sullivan, Long & Hagerty, Bessemer, Ala., \$258,500 for water treatment plant and Hebert Brothers, Plaquemine, \$488,825 for water distribution system.

ST. MARY PARISH—Cabot Carbon Co., subsidiary of Godfrey L. Cabot, Inc., Boston, plans carbon black plant, Bayou Sale, near Gulf Coast, \$4,000,000.

SCOTT—Lafayette Parish School Board, Lafayette, let contract to Well Lumber Co., Abbeville, \$147,325 for gymnasium-cafeteria at Judge High School.

SHREVEPORT—National Supply Co. let contract to W. A. Gray Construction Co., Shreveport, \$105,603 for warehouse and office building.

SHREVEPORT—R. P. Farnsworth & Co., Inc., New Orleans, has contract, \$2,138,000 for Town House Apartments.

SHREVEPORT—Citizens' Survey Committee studying proposal for calling issuance of \$20,000,000 bond issue to construct 32 new schools in Caddo Parish within the next five years.

SHREVEPORT—Commissioner of Public Utilities will recommend to City Planning Commission & City Council a \$18,887,000 improvement program, will include proposed sewage disposal system improvement, etc.

SHREVEPORT—St. Paul's Episcopal Church Congregation let contract to W. A. Gray Construction Co., \$100,000, for Sunday-school building and parish house.

SHREVEPORT—M. E. Pollard let contract to Werner Co., \$140,000 for new warehouse and office building, Dalzell and Linwood Sts.

MARYLAND

MARYLAND—Bureau of Public Roads, Arlington, Va., received low bid from Allied Contractors, \$509,465, for reinf. conc. structures and approaches, Baltimore-Washington Parkway, Project IF-2.

MARYLAND—Chesapeake and Potomac Telephone Co. of Baltimore plans expenditures of \$4,035,000 for improvement and expansion of telephone facilities throughout Maryland.

MARYLAND AND WASHINGTON, D. C.—Department of the Army seeking \$7,854,700 for construction work, Army Medical Center in Bethesda, Md. and Washington, D. C.

ANNAPOLIS—Emergency Hospital Association let contract to Henry A. Knott, Inc., Baltimore, \$163,296 for new boiler house.

BALTIMORE—Housing Authority of Baltimore City received low bid from Ray L. Martin, \$296,680, for replacing present heating units for natural gas fuel for Project No. MD-29, O'Donnell Heights.

BALTIMORE—Hayward Realty Co. will construct 45 dwellings, Glen Heights Ave., \$240,000.

BALTIMORE—Eastern Building Co. has plans completed for 270 residences on Pratt St., Bank St., Conley St., Gough St. and Langdon St., \$1,100,000.

BALTIMORE—Board of Estimates let contract to Constanza Construction Co., \$379,475 for Franklin D. Roosevelt Elementary School No. 18.

BALTIMORE—Edmondale Bldg. Company will construct 156 dwellings, \$1,092,000.

BALTIMORE—St. Mary's R. C. Church let contract to Morrow Brothers, \$710,500 for school auditorium and convent buildings.

BALTIMORE—Western Maryland Railway plans \$12,000,000 improvement program for Port Covington facilities.

BALTIMORE—Baltimore City Department of Education received permit from Bureau of Building Inspection to erect one, two & three story masonry school and temporary office and sheds at 3500 Hillen Road, \$6,188,000.

BALTIMORE—The Home Sales Co., "B" has plans completed for 52 row residences on Pinksley Ave., \$260,000.

BALTIMORE—School Board plans seeking next May \$12,000,000 loan for school construction.

BALTIMORE—City studying proposal \$20,000,000 loan for school construction.

BALTIMORE—Maryland Jockey Club allocated \$717,488 from State Racing Fund, for improvements to Pimlico Race Track.

BALTIMORE—Associated Jewish Charities plans construction work, \$1,295,151.

BALTIMORE—Budget Bureau, Washington, D. C., granted an extra \$1,500,000 to speed up work for Baltimore-Washington Parkway.

BALTIMORE—City studying proposals for \$2,000,000 loan for converting gas lights to electricity and \$500,000 loan for traffic control lights.

BALTIMORE—Home Sales Co. will construct 52 dwellings, 2101-43 Pinksley Ave., \$260,000.

BALTIMORE—Esso Standard Oil Co. will construct storage tanks, \$200,000.

BALTIMORE—Board of Estimates received low bid from Baltimore Contractors, Inc., \$6,370,000 for alterations and additions of infirmary building, City Hospitals.

BALTIMORE—Welsh Homes, Inc., will construct 28 dwellings, 1500-34, 1501-19 Ferney Rd., \$224,000.

BALTIMORE—Fenwick Corp. of Baltimore will construct 75 dwellings, Lyndale Ave., \$80,000.

BALTIMORE—Board of Estimates let contract to Piracel Construction Co., Inc., \$1,249,500 for remodeling Court House, Phase I.

BALTIMORE—Board of Estimates let contract to Philip Vizzini & Son, Inc., \$1,047,782 for Cherry Hill Colored Elementary School.

BALTIMORE—Bureau of Public Roads, Arlington, Va., received low bid for projects in following counties:

Prince George and Anne Arundel—Baltimore-Washington Parkway Hwy. Project IF 2, 0.019 mi.; Allied Contractors, Baltimore, \$509,465;

Anne Arundel—Baltimore-Washington Parkway, Project IH2, 0.067 mi.; Brooklyn Engineering Corp., Baltimore, \$518,296;

Prince George and Anne Arundel Counties—Wright Contracting Co., Columbus, Ohio, \$670,335, for Baltimore-Washington Parkway, Project IF1 & 1G1.

BALTIMORE—State Roads Commission let contract to American Asphalt Products Co. and Arthur A. Mackie Construction Co., \$763,327, for virtual rebuilding Lappans-Sharpsburg Rd., 6.7 mi.; and Bester-Long, Inc., Hagerstown, \$383,527, for grad., drain., widening and resurf., 4-mi. portion of Rt. 60.

BALTIMORE—State Roads Commission let contracts for projects in following counties:

Talbot—Contract T-127-1-215; grad., drain., widening, resurf. and surf., 7 mi., sub-base and bitum. treat. macadam base course, surf. and resurf. bitum. conc. base and surf. courses; Eastern Highways Corp., Brooklyn, Md., \$293,956 for grad.;

Washington—Contract W-404-615; macadam base course, bitum. conc., specification "B", base, surf. and wedge courses, 4.016 mi.; Bester Long, Inc., Hagerstown, \$383,527.

Caroline—Contract CO-223-215; existing roadway-bitum. conc. leveling wedge, base

and surf. courses-macadam base, penetration macadam base, bitum. conc. base and surf. courses, 6.171 mi.; Bituminous Construction Co., \$475,130 for grad.;

Washington—Contract W-299-1-615, crusher-run sub-base, macadam base course and bitum. conc., base, wedge, leveling and surf. courses on Rt. 65, 6.719 mi.; American Asphalt Products Co., and Arthur A. Mackie Construction Co., \$763,327 for stone;

Montgomery—Contract No. M-464-317, Fed. Aid Proj. S-200(1), screenings foundation layer, macadam base course and penetration macadam surf., 1.870 mi.; Richard F. Kilne, Frederick, \$231,294;

Montgomery—Contract M-435-4-315, Fed. Aid Proj. U-152(3), reinf. cement conc. surf. along State Rt. 97, 1.732 mi.; Wilmoth Paving Co., Washington, D. C., \$765,332 (gravel).

BALTIMORE—State Roads Commission received low bids for projects in following counties:

Baltimore—Contract B-327-1-415, bitum. conc. surf. base, wedge and leveling sources, 5.475 mi.; Harry T. Campbell Sons Corp., Towson, \$379,116 for stone and Bituminous Construction Co., 3301 Ridgewood Ave., \$397,026 for slag;

Carroll—Contract CL-319-1-317, Fed. Aid Proj. S-397(3), screenings foundation layer, macadam base course and penetration macadam surf., 3.318 mi.; T. Edgie Russell, Frederick, \$103,830;

Prince George—Contract P-673-1-515, widening 5 bridges, over Henson Creek branch, Payne's branch, Waterloo Run, Piscataway Creek branch and Piscataway Creek; Camden Construction Co., Inc., \$78,063;

Calvert—Contract No. C-197-1-515; grad., drain. and surf. roadway along Chesapeake Beach Railroad Right of Way, 1.671 mi. grav. surf. course, bitum. stab. base course; F. B. Asher, Jr. & Sons, Inc., Annapolis, \$237,229;

Carroll—Contract No. CL-304-1-315, 3.229 mi. roadwork, Rt. 26, by-passing Eldersburg towards Frederick; Camden Construction Co., Inc., Baltimore, \$504,004;

Anne Arundel—Contract No. AA-368-13-315, 1.662 mi. roadwork on Baltimore-Washington Expressway, Nursery Rd., Rt. 165, to U.S. 301 and one full cloverleaf interchange excluding interchange structure, 1.497 mi.; Nello L. Teer, Durham, N. C., \$1,175,834.

BERLIN—Worcester County Board of Education received low bid from Charles E. Brohawn & Sons, \$806,000 for consolidated high school.

BETHESDA—Public Buildings Service, General Services Administration, Washington, D. C., received low bid from John McWhain, Philadelphia, Pa., \$5,122,200 for boiler plant, National Institutes of Health.

CAMBRIDGE—Department of Public Improvements, Baltimore, let contract to Charles E. Brohawn & Brother, Cambridge, \$28,956 for medical and surgical building, Eastern Shore State Hospital.

CARDECK—Navy Department seeking \$1,000,000 for completion of a 3-meter wind tunnel.

CATONSVILLE—Department of Public Improvements, Baltimore, received low bid

(Continued on page 22)

Alabama Airport Work Placed at \$600,000

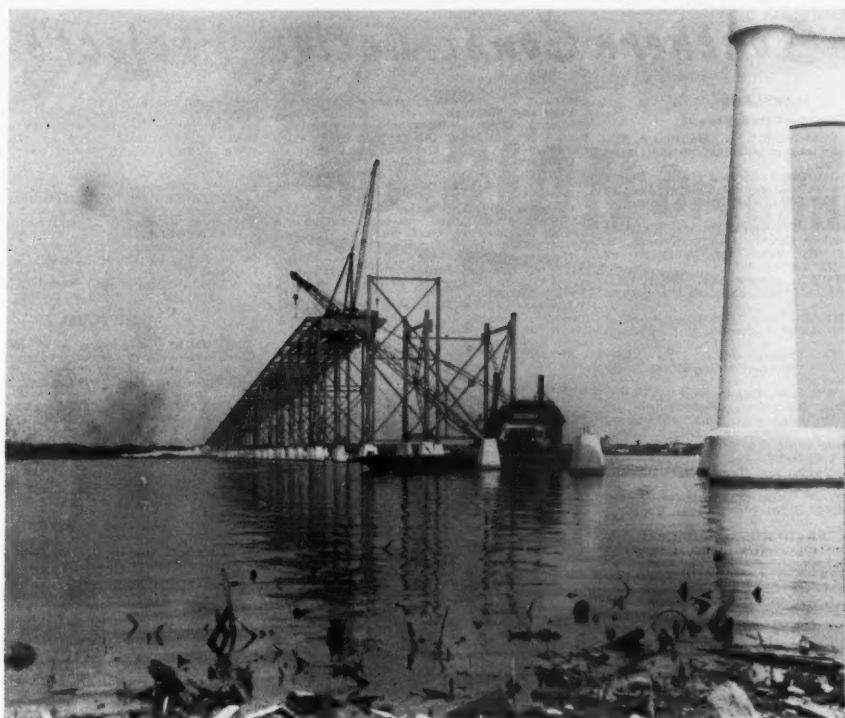
Construction of a 4,000-foot paved runway which, with lighting, is expected to cost \$138,000, has been approved for Vandegriff Field, Tuscaloosa, Ala., according to State Aeronautics Director Asa Rountree, Jr. He said the Civil Aeronautics Administration had approved the airport's lease which was the final obstacle to be cleared.

Also, he said, plans to resurface three runways at the Selma, Ala., municipal airport have been approved.

The Aeronautics director said that Alabama's airport improvement program would be given a \$600,000 boost, mostly from federal funds. Eleven projects are scheduled for 1950-51.

They are: Selma, administration building and ramp, \$38,600; Mobile, general improvements, \$20,000; Birmingham, new ramp, \$130,000; Gadsden, resurface runway joints, \$30,000; Huntsville, section of administration building, access road, parking ramps, \$126,000; Guntersville, one-strip field, \$36,000. Also, (reaffirmed projects): Roanoke, one-strip field, \$44,000; Huntsville, addition to administration building, taxiways, \$126,000; Dothan, runway lights, \$12,800; Sylacauga, purchase of field for city airport, \$16,225.

Mr. Rountree said that henceforth federal aid projects will be limited to those needed in the defense program.



East approach, Calcasieu River Bridge, Lake Charles, La. Total length of steel superstructure 6,895 ft., weight 8,500 tons. Steel fabrication and erection by Virginia Bridge. Concrete floor by Walter L. Gause & Co., Detroit, Mich. Sub-structure by Massman Construction Co. and Kansas City Bridge Co., Kansas City, Mo.

A STEEL SKYWAY IN THE MAKING

This progress picture, taken shortly after erection operations got under way, shows the East Approach of the new steel highway bridge over Calcasieu River at Lake Charles, Louisiana. Today the nearly 7,000-foot steel superstructure, including spans of various types, is now rapidly approaching completion for early use. Even at Virginia Bridge, where "Another Day Another Bridge" is a common expression, this spectacular structure gives pause for satisfied reflection as our workmen realize they have built another of America's great bridges. Masters of their craft they take these unusual jobs in stride as a matter of routine, but in fact only unlimited "Experience" can cultivate this confident know-how so essential to large scale bridge building.

BRIDGE BUILDERS FOR FIFTY-FIVE YEARS



Virginia Bridge Company

ROANOKE

BIRMINGHAM

MEMPHIS

NEW YORK

ATLANTA

DALLAS

UNITED STATES STEEL

Southern Construction Projects

MARYLAND

(Continued from page 20)

from Davis Construction Co., Baltimore, \$1,666,000 for admissions building, Spring Grove State Hospital.

EMMITTSBURG—Frederick County Board of Education let contract to Allan F. Feaser, Taneytown, \$185,865 for addition to Emmittsburg School.

FREDERICK—Frederick County Board of Education asked County Commissioners for \$888,820 in city funds for operation of public schools during 1951.

HAGERSTOWN—Hagerstown Fair Association to start new \$250,000 grandstand at Fairgrounds.

INDIAN HEAD—Navy Department seeking \$1,800,000 for modern propellant production facilities.

LA PLATA—Department of the Army seeking \$225,000 for construction work, Army Receiving Station.

MOUNT WILSON—Department of Public Improvements, Baltimore, received low bid from J. H. Williams & Co., Inc., Baltimore, \$328,000 for 2 boilers and boiler house, Mount Wilson State Hospital.

PORT DEPOSIT—Navy Department, Bureau of Yards and Docks, let \$10,000,000 contract to Consolidated Engineering Co., Baltimore, cost-plus-fixed-fee basis, for rebuilding Bainbridge Naval Training Station.

PRINCE FREDERICK—Calvert County Hospital and Public Health plans construction, \$446,428.

ROCKVILLE—Christ Child Convalescent Home plans construction, \$350,000.

ROCKVILLE—Montgomery County Council approved park bonds under the Capper-Cramton Act for extension of Silgo Creek and Rock Creek parks through their fourth units, \$198,000.

SNOW HILL—Worcester County School Board received low bid of \$1,806,931 from Charles E. Brohawn & Son, Cambridge, for new high school.

TOWSON—Goucher College let contract to Harry E. Hudgins, Baltimore, for library Dulaney Valley & Joppa Rds., \$500,000.

MISSISSIPPI

MISSISSIPPI—Bureau of Public Roads, Washington, D. C., announced state will receive \$3,128,357 on Federal-Aid highway systems, \$2,628,687 on Secondary or Federal roads and \$499,670 on Urban highways.

BAY SPRINGS—Bay Springs Telephone Co. plans improvement and expansion of its system, \$374,000.

CLARKSDALE—City plans \$500,000 school improvements.

COLUMBUS—Columbus Separate School District plans \$1,500,000 school construction.

CORINTH—Mayor and Board of Aldermen let contract to Birmingham Building Co., Birmingham, Ala., \$536,356, for natural gas transmission line and distribution system for Corinth.

CORINTH—Weaver Pants Corp. plans \$100,000 addition.

GREENVILLE—Greenville Separate School District let contract to Starr Construction Co., \$400,000 for colored high school.

GREENVILLE—City plans \$4,000,000 building to be leased to Alexander Smith & Sons Carpet Co.

GULFPORT—Board of Commissioners let contracts to following for additions and improvements to port facilities: Texas Construction Co., Dallas, Texas, Div. A., \$25 ft. East Pier wharf, with re-rolled steel and reef shells, \$522,700; J. C. McClendon, Jr., \$57,976, Div. B., repairs and additions to existing warehouse on East Pier and Bernard & Byrd, Inc., Mobile, Ala., \$305,699, Div. C., commercial small craft harbor west of West Pier.

GULFPORT—Board of Supervisors of Harrison County sold \$1,250,000 bond issue to First National Bank of Mobile, Ala., for seawall.

GULFPORT—Board of Supervisors of Harrison County received low bid from E. L. Kennedy for trunk storm sewer line, \$177,858.

HATTIESBURG—Main St. Baptist Church plans addition to church building, \$300,000.

JACKSON—State Highway Commission received low bid for project in following county:

Coahoma—Fed. Aid Proj. F-043-3 (1), grad., drain., culverts and bridge on 7.161 mi. Mississippi Hwy. No. 1; S. L. Reed, Belzoni, \$171,714.

JACKSON—State Highway Department let

contracts for projects in following counties:

Pike and Walthall—Proj. S-183(3), 7.088 mi. grad., drain., culverts and double bitum. surf. treat. on Hwy. 48; Cobb Brothers Construction Co., Inc., Meridian, \$122,385;

Calhoun—Proj. SP-8-152(2), Cont. 1, 4.033 mi. grad., drain., culverts and bridges on Hwy. 8; Boyd Construction Co., Columbia, \$192,426;

Gretna and Yalobusha—SP-7-1525(1), 12.606 mi. grad., drain., culverts, bridges and double bitum. surf. treat. on Hwy. 7; Boyd Construction Co., Columbia, \$590,829;

Benton—S-38(2), 7.975 mi. grad., drain., culverts, base and double bitum. surf. treat. on Hwy. 5; Bowyer & Johnson, Jackson, Tenn., \$195,819;

Lawrence—S-290(2), 8.334 mi. grad., drain., culverts, bridge and double bitum. surf. treat. on Hwy. 43; Dunn Construction Co., Inc., Birmingham, Ala., \$164,706.

MOBILE CITY—Housing Authority let contract to Roscoe-Perry, Louis, Miss., and Currie & Corley, Raleigh, Miss., \$428,000, for 64 unit housing project, Miss. 3-3.

MEDIAN—City plans 5 schools, three auditoriums, four cafeterias and changing two cafeterias, additions to 40 rooms, repairs, expansions and improving schools, \$3,000,000.

PICAYUNE—Mayor and Board of Aldermen let contract to M. T. Reed Construction Co., Jackson, \$338,876 for sewage collection system.

PONTOTOC—Mayor and Board of Aldermen let contract to Russell & Blaine, Mt. Olive, \$117,532, for asph. pavt., curbs and

gutters on several streets.

TUPELO—Mayor and Board of Aldermen let contract to the following for water and sewer improvements: 4 lift stations, \$59,000; sewer lines, \$429,016; water lines, \$135,886; J. B. McCrary Engineering Corp., Atlanta, Ga. and M. & W. Construction Co., Tupelo, \$255,596 for disposal plant.

VICKSBURG—R. M. Ables has contract, \$189,975 for two-story newspaper plant for Vicksburg Evening Post and Herald.

WAYNESBORO—Wayne County Board of Supervisors plans \$200,000 glove factory to be operated by Wells Lamont Glove Corp., Chicago, Ill.

WINONA—Mayor and Board of Aldermen plan \$125,000 waterworks system improvements.

MISSOURI

MISSOURI—Bureau of Public Roads, Washington, D. C., announced state will receive allocations of \$1,016,945 for Federal-Aid highway system, Secondary roads and Urban roads.

ALBANY—Board of Education received low bid from Hensley Construction Co., St. Joseph, \$141,640 for grade school.

CLAYTON—Brown Shoe Co. plans office building, \$1,500,000.

CLAYTON—Chaminade College plans building, \$150,000.

CLAYTON—Corporation, c/o Glick Real Estate Co., Inc., plans apartment building, \$3,000,000.

(Continued on page 24)

\$10,965,671 Contracts Let For Jacksonville Bridge

The Florida State Road Department has awarded Bethlehem Steel Co. and Merritt-Chapman and Scott Corp. contracts for construction of Arlington Bridge across the St. Johns River at Jacksonville, Fla.

The total bid price of the two firms was \$10,965,671. The Bethlehem bid for the superstructure was \$7,376,712. Merritt-Chapman and Scott's offer on the sub-structure was \$3,588,959.

A total of seven bids were received on the sub-structure contract and only three on the superstructure. Other bidders on the sub-structure were: Tidewater Construction Corp., \$4,041,706.20; Dravo Corp., \$4,874,251; Hardaway Contracting Co., \$3,876,833; Massman Construction

Co. with Diamond Construction Co., \$4,603,000; Baltimore Contractors, Inc., \$5,469,578, and Allied Structural Steel Co. with Industrial Contracting Co., \$4,996,009. Other superstructure offers were made by American Bridge Co., \$7,857,177.40, and Allied Structural Steel Co., \$8,117,290.

Vice President R. E. DeSimone of Merritt-Chapman and Scott said the company will probably move some of the equipment and cofferdam steel from the Chesapeake Bay and Severn River bridge sites to Jacksonville. All of the Arlington Bridge piers except the trestle approaches on the south side of the river will be built inside cofferdams.

Orleans Catholic Schools Costing \$6,271,000

School projects in the Archdiocese of New Orleans are estimated to involve expenditure of \$6,271,000, according to Monsignor Henry C. Bezou, archdiocesan superintendent of schools. Among the major projects, their cost and the architects are the following:

St. Dominic, New Orleans, \$500,000, Bendernagel & Cazale, architects;

St. Louis Cathedral, New Orleans, \$410,000, Wogan & Bernard, architects;

Redemptorist, \$266,000, Nolan, Morman & Nolan, architects;

Our Lady of Prompt Succour, Westwego, \$250,000, Diboll, Kessels & Associates, architects;

St. Christopher, New Orleans, \$200,000, Bendernagel & Cazale, architects;

St. Paul's, Covington, \$250,000, William R. Burk, architect;

Holy Family, Port Allen, \$125,000, Diboll, Kessels & Associates, architects;

De la Salle high school, New Orleans, \$425,000, William R. Burk, architect;

St. Augustine high school, New Orleans, \$410,000, Nolan, Morman & Nolan, architects;

Xavier preparatory, New Orleans, \$600,000, Wogan and Bernard, architects;

St. Mary of the Angels, New Orleans, \$500,000, J. K. de la Vergne, architect;

St. James Major, \$450,000, William R. Burk, architect;

St. Francis Xavier, New Orleans, \$260,000, Paul Charbonnet, Jr., architect;

St. Agnes, New Orleans, \$300,000, Bendernagel & Cazale, architects;

St. Raphael, New Orleans, \$175,000, Herbert A. Benson, architect;

Immaculate Conception, Marrero, \$250,000, Curtis & Davis, architects;

St. Francis de Sales, Houma, \$600,000, Bendernagel & Cazale, architects;

Sacred Heart, Baton Rouge, \$300,000, Bendernagel & Cazale, architects.



2 cubic yard MARION 362 dragline owned by R. H. Wright and Son at work excavating muck on new roadbed for Florida State Highway 80.

THE CONTRACT—Building a new roadbed for Florida State Highway west of West Palm Beach.

THE MACHINE—A MARION Type 362 dragline with a 2 cubic yard bucket was used to excavate and spoil muck and strip rock overburden.

THE CONTRACTOR—R. H. Wright & Son, leading contracting firm with headquarters in Fort Lauderdale, Florida.

JOB REPORT—Construction of the roadbed, with the MARION 362 leading the way, was completed the latter

part of October, SIX MONTHS AHEAD OF THE ORIGINAL SCHEDULE! The 362 excavated an average of some 2,800 cubic yards of muck per 10-hour day.

SUPT. SAYS—Douglas Smook calls the MARION 362 "fast, dependable and a high producer, largely responsible for our being well ahead of schedule."

OPERATOR SAYS—"The MARION 362 is the easiest machine I've operated in my 23 years of operating experience. It has given excellent service."—W. C. Hemby.

* * *

The ability of the MARION 362 to handle many jobs well and get them done quickly and dependably has made this machine a favorite among contractors. More than half a thousand MARION 362's are in service today! In addition to the 362 there are several other MARIONS available with a variety of front-end attachments for outstanding service on a wide range of construction jobs. Get the full story on the MARION Line from your nearest MARION sales representative or distributor.

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901 American Life Building
Birmingham, Alabama

MARION POWER SHOVEL COMPANY

4831 Elby Avenue
Dallas, Texas

LOUISIANA INDUSTRIAL EQUIPMENT COMPANY

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Baton Rouge, Louisiana

MARTIN-LUMBY COMPANY

1845 Plantation Road
Dallas 5, Texas

EQUIPMENT SUPPLY COMPANY

118-120 S. Campbell
El Paso, Texas

SOUTH TEXAS EQUIPMENT COMPANY

550 Navigation Blvd.
Houston 1, Texas

TOWNSCO EQUIP. COMPANY

1700-1708 N. W. Sixth Street
Oklahoma City, Oklahoma

TOWNSCO EQUIP. COMPANY

202 South Lansing
Tulsa, Oklahoma

Southern Construction Projects

MISSOURI

(Continued from page 22)

CLAYTON—Board of Education plans \$300,000 high school.

COLUMBIA—Board of Visitors of University of Missouri has proposed that the state undertake a \$90,000,000 bond issue to finance critically needed physical equipment for Missouri University and 8 other state educational institutions.

LEBANON—Laclede Electric Corporation plans 310 miles of distribution line, improvements, and headquarters facilities, \$715,000.

MARYVILLE—J. W. Shikles & Co., Kansas City, plan intercepting and outfall sewers and sewage treatment plants, \$402,000.

MENDON—Northwestern School District No. R-1, Charlton County, received low bid from Piez E. Lewis & Son, St. Clair, \$187,670 for high school.

NEVADA—Board of Education let contract to George E. Bauman, \$245,210 for elementary school and school additions and alterations.

NORMANDY—Normandy Consolidated School District let contract to George L. Cousins Contracting Co., St. Louis, \$408,803 for alterations and additions to school.

ST. LOUIS—Board of Education plans elementary school, 19th & Cass Sts., \$438,500.

ST. LOUIS—U. S. Coast Guard received low bid from Robert Paulus Construction Co., \$386,345, Item 1, with steel windows, \$375,000 on Item 2, with aluminum windows, shop building, Foot of Iron St.

ST. LOUIS—George Hertel will construct 19 dwellings, \$135,000.

ST. LOUIS—McDonnell Aircraft Corp. plans \$1,500,000 flight test hangar building.

ST. LOUIS—DePaul Hospital received low bid from Robert Paulus Construction Co., \$1,339,586 for DePaul School of Nursing.

ST. LOUIS COUNTY—Consolidated School District R-8 let contract to Juengel Construction Co., Affton, \$197,309 for high school, Lindbergh Rd.

ST. LOUIS—St. Louis Urban Area Expressway urged 3 expressways, \$100,000, including Ozark Expressway, Daniel Boone Expressway and Mark Twain Expressway.

ST. LOUIS—Roberts Chevrolet Co. let contract to G. L. Tarlton Contracting Co., for alterations to auto sales and service building, \$100,000.

ST. LOUIS—Spool Cotton Co. let contract to John Hill Construction Co. for warehouse and office, \$350,000.

ST. LOUIS—Sisters of Charity of Blessed Virgin Mary let contract to Michael J. Lawlor for high school and convent, \$1,500,000.

ST. LOUIS—Horner and Shiffrin recommended urgently needed city-county sewer survey, \$33,543,000.

ST. LOUIS—City plans waterworks improvements, \$1,300,000.

ST. LOUIS—Lammert Furniture Co. let contract to Murch-Jarvis Co., Inc., for warehouse addition, \$175,000.

UNIVERSITY CITY—City plans \$2,185,000 bond issue for additional fire equipment, new bridges, expanded park and recreational facilities, rubbish disposal plant, sewer extensions, addition to library.

UNIVERSITY CITY—Board of Education plans \$1,000,000 bond issue for two elementary schools.

NORTH CAROLINA

Bureau of Public Roads, Washington, D. C., announced state will receive \$4,340,090 for Federal-Aid highway system (major, highways), \$3,708,107 for secondary or federal roads and \$1,347,512 on urban highways.

ALABAMA COUNTY—County Board of Education let contract to H. F. Mitchell Construction Co., \$117,112 for gymnasium and shop building at Altamahaw-Osagee School.

ASHE COUNTY—Board of Trustees of Ashe County Memorial Hospital, Inc., let contract to Hickory Construction Co., Hickory, \$219,900 for addition to hospital and sewage disposal plant.

ASHEVILLE—Memorial Mission Hospital and Victoria Hospital plan consolidation plan 350-bed district hospital and medical center on the 30-acre tract occupied by Victoria Hospital; plans call for building to house 200 beds adjoining the present Victoria Hospital and the conversion of Victoria into a 150-bed hospital, \$4,000,000.

AVERY COUNTY—County Board of Education received low bid from W. E. Dale Construction Co., Morganton, \$126,900 for Croshore School and Elsie Construction Co., \$50,000 for Riverside School and \$23,500 for Park School.

BUNCOMBE COUNTY—County School Board, Asheville, received low bid from W.

E. Dale Construction Co., Morganton, \$107,000 for addition to Barnardsville School and J. A. Maxwell, \$12,583 for Anderson Cove School.

BUNCOMBE COUNTY—County Board of Education, Asheville, let contract to Merchant Construction Co., Asheville, \$103,737 for South Hominy School.

BURLINGTON—Front Street Methodist Church Congregation let contract to J. A. Jones Construction Co., Charlotte, for church, \$380,000.

CHARLOTTE—Board of School Commissioners let contract to J. A. Jones Construction Co., \$158,300 for natural science buildings for Myers Park School.

CHARLOTTE—McLellan Stores Co. plans remodeling 117 N. Tryon St., Charlotte, N. C., location, \$400,000.

CHARLOTTE—Housing Authority plans 200 unit low rent housing project, Rozelle's Ferry Road, \$1,463,000.

CHARLOTTE—Housing Authority received low bid from Southeastern Construction Co., \$3,305,000, for 400 dwelling units and community buildings.

CHERRY POINT—Navy Department plans additional aviation fuel storage facilities, Marine Corps Naval Air Station, \$900,000.

CONCORD—Housing Authority let contract to Coggins Electric Company, Raleigh, \$293,780, for 46 unit housing project, NC 6-1.

CULLOWHEE—Western Carolina Teachers College received low bid from J. A. Jones Construction Co., Charlotte, \$662,000 for men's dormitory.

DURHAM—Duke University plans \$250,000 annex to new physics building.

FRANKLIN COUNTY—County Board of Education, Louisburg, received low bid from Coggins Construction Co., Raleigh, \$124,280 for additions to Gold Sand School.

GOLDSBORO—Housing Authority let contract to T. A. Loving and Co., Contrs., \$1,876,740, for 275 unit housing project, NC 15 and NC 15-2.

GREENSBORO—Housing Authority received low bid from H. L. Coble Construction Co., \$3,169,890, for 400-unit white public housing project.

GREENSBORO—City Council received

(Continued on page 26)

Contractor Names Neville To Head A.E.C. Project

F. H. McGraw & Co. has announced that Donald W. Neville, vice president, has been selected to head the \$350,000,000 construction project for the Atomic Energy Commission at Paducah, Ky. The project, which was announced by the AEC last month, involves the largest single construction contract ever awarded to a construction company. It will require nearly 10,000 men and will take more than two years to complete.

The McGraw Company was selected as construction contractor after the AEC reviewed a list of qualified contractors who expressed interest in participating in the national atomic energy program. The initial list was narrowed to a group of 13 firms on the basis of experience in the construction field, present and future commitments of each firm, availability of key personnel for assignment to the Commission's project, and performance on past contracts. Clifford S. Strike, president of F. H. McGraw & Co., and Frederick J. Mayo, vice president, represented McGraw in contract discussions.

Paul F. Pape and Hinman Root of McGraw's New York office will serve as project engineer and chief of purchases, respectively. A. A. Persson, veteran McGraw construction manager, will be project manager. Neville and Persson are assigned to McGraw's Chicago office.

Both Mr. Pape and Mr. Root have been prominent in New York construction circles for many years. Mr. Pape participated in the engineering and construction of the Lincoln Tunnel, N. Y. *Daily News* building, and many other landmarks in the New York area. During the war he was assistant to the chief engineer on the Oak Ridge, Tenn., atomic energy project. He has been with McGraw since 1945 and has served as chief engineer on industrial projects for the company both in the U. S. and abroad.

Mr. Root is a veteran constructioneer who has participated in the construction of the McGraw-Hill building, several Park Avenue apartments and many other commercial structures in the city.

District School Program Would Cost \$6,888,000

Seventeen school buildings estimated to cost \$6,888,000 are proposed by the District of Columbia Board of Education, according to an announcement by John M. Riecks, associate superintendent in charge of buildings and grounds. The projects, which are subject to approval of Congress, are:

Bunker Hill elementary school, Fourteenth and Michigan Avenue, northeast, \$328,000;

Coolidge senior high school, Fifth and Tuckerman streets, northwest, \$400,000;

Davis elementary school, Forty-fourth Place and H street, southeast, \$116,100;

Eliot junior high school, Eighteenth and B streets, northeast, \$375,000;

Keene elementary school, Rock Creek Church Road and Riggs Road, northeast, \$254,100;

Randle Highlands elementary school, Thirtieth and R streets, southeast, \$250,000;

Armstrong senior high school, Sixth and Brentwood Road, northeast, \$500,000;

Browne junior high school, Twenty-fourth and Benning Road, northeast, \$248,900;

Dunbar senior high school, First and N streets, northwest, \$300,000;

Francis junior high school, Twenty-fourth and N streets, N.W., \$139,200.

Payne elementary school, Fifteenth and C streets, southeast, \$250,000;

Douglas junior high school, in vicinity of Pomeroy Road, Douglass Place and Stanton Road, southeast, \$1,300,000;

Richardson elementary school, Fifty-third and Blaine streets, northeast, \$170,000;

Spingarn senior high school, Twenty-fourth and Benning Road, northeast, \$660,000;

Syphas elementary school, Half street, between N and O streets, southwest, \$234,000;

Terrell junior high school, First and Pierce streets, northwest, \$817,700;

Turner elementary school, Stanton Road and Alabama Avenue, southeast, \$245,000.

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Southern Construction Projects

NORTH CAROLINA

(Continued from page 24)

recommendation from Greater Greensboro Arterial Roads Commission for proposed southern by-pass highway, \$2,000,000.

HALIFAX COUNTY—County Board of Education received low bid from J. N. Byran & Son, Raleigh, combination bid of \$198,758 for classroom buildings at Davie, Brawley and Eastman Schools.

HENDERSON—Vance County plans water facilities including elevated tank and feeder main, pumping station and raw water supply line, \$398,000.

HENDERSONVILLE—Belding Heminway, Inc. let contract to Daniel Construction Co., Greenville, S. C., for textile thread plant, U. S. Highway 64 at Davis Station, \$1,500,000.

HIGH POINT—U. S. Plywood Corp. let contract to R. K. Stewart & Son, \$130,000 for warehouse and office.

HOFFMAN—Board of Correction & Training received low bid from J. M. Thompson Co., Raleigh, \$181,375 for administration building, Morrison Training School.

KINSTON—Housing Authority let contract to Rogers Construction Co., \$1,225,000.

LAKEVIEW—Wyandotte Worsted Co., Waterville, Maine, plans woolen mill, \$50,000,000.

LENOIR COUNTY—County Board of Education let contract to O. W. Godwin, Dunn, for two identical county consolidated negro school buildings, Savannah School, \$180,243 and Woodmont School, \$180,243.

LIMBERTON—Board of Trustees of Robeson County let contract to Crosland Construction Co., Columbia, S. C., \$789,757 for hospital.

MT. HOLLY—Gaston County Board of Education let contract to E. R. Morgan, Gastonia, \$195,700 for new auditorium and new primary classroom addition.

ORANGE COUNTY—County Board of Education, Hillsboro, received low bid from Hunt Construction Co., Durham, \$179,500 for Cedar Grove School.

OXFORD—City Board of Education let contract to George W. Kane, Durham, \$137,492 for addition to Oxford Colored School.

RALEIGH—State Highway Commission let contracts for projects in following counties:

Duplin—15.01 mi. grad., pavt. and struc. on N. C. 11; E. H. Hines Construction Co., Greenwood, S. C., \$350,520 for roadway and Wilson Construction Co., Salisbury, N. C., \$161,467 for str.

Craven-Pamlico—10.53 mi. grad., pavt. and struc. on N. C. 55; Dickerson, Inc., Monroe, \$365,861 and Sanford Construction Co., Sanford, \$136,713 for str.

Orange-Durham—8.35 mi. grad. and str. in Chapel Hill; A. B. Burton Co., Inc., Lynchburg, Va., \$354,543 for roadway and F. A. Triplett, Inc., Chester, S. C., \$315,441 for str.

Gaston-Lincoln—8.74 mi. grad., pavt. and str. on N. C. 150; Dickerson, Inc., \$319,359 for roadway and J. C. Edwards, Grangeburg, S. C., \$88,129 for str.

Mecklenburg-Cabarrus—16.5 mi. grad. and str. on U. S. 29; Gilbert Engineering Co., Statesville, \$188,452 for roadway and Elythe Brothers Co., Charlotte, \$255,497 for str.

Richmond—2.34 mi. grad., pavt. and str. on US 74; Ray D. Lowder, Inc., Albemarle, \$151,442.

Pitt-Greene—15.4 mi. hard-surf. on various roads; Brown Paving Co., Lexington, \$101,100.

Cumberland—20.2 mi. hard-surf. between Riley Mill Pond Rd. and Stedman-Cedar Creek Rd.; Zeigler-Cline Construction Co., Fayetteville, \$82,678.

Harnett—1.8 mi. hard-surf. on county road; F. D. Cline Construction Co., Raleigh, \$51,326.

Scotland-Robeson—28 mi. hard-surf. on various county roads; Shepherd Construction Co., Inc., Atlanta, Ga., \$186,670.

Kowan—14.7 mi. hard-surf. on Mount Hope-Faith Rd.; Dickerson, Inc., \$70,656.

Madison—0.31 mi. bridge and approaches for relocation of U. S. 25 and 70 at French Broad River; J. C. Edwards, Orangeburg, S. C., \$204,060.

Onslow—struc. on road from point on U. S. 17 3 mi. northwest of Jacksonville southeast to N. C. 25 at Piney Green; Dickerson, Inc., Monroe, \$51,072.

Brunswick-Columbus—bridge over Waccamaw river; Pyramid Construction Co., Inc., Wilmington, \$68,498.

Cleveland-Lincoln—Prof. 9-405 S-395(1), E. H. Hines, \$79,485 for roadway and Wilson Construction Co., \$88,386 for structure.

Franklin—Prof. 4132 S-225(2), Nello L. Teer, Durham, \$301,001 for roadway and E.

P. Brinkley, Raleigh, \$82,011.

RALEIGH—State Highway Commission received low bids for projects in following counties:

Edgecombe—0.87 mi. grad., pavt. and str. on N. C. 95; Barnhill & Long, Inc., Tarboro, \$122,974.

Edgecombe-Halifax—24.4 mi. grad., pavt. and str. on U. S. 301 for widening and resurf.; Nello L. Teer Co., Durham, \$543,381.

Craven-Beaufort—18.5 mi. grad. and str. on U. S. 17; U. S. Hill Construction Co., Washington, N. C., \$185,261 for roadway; Sanford Construction Co., Sanford, \$60,183 for str.

Cumberland—1.12 mi. grad., pavt. and str. center of Fowan St. in Fayetteville; Zeigler-Cline Construction Co., Fayetteville, \$247,082 for roadway and F. A. Triplett, Inc., Chester, S. C., \$125,824 for str.

Fender-New Hanover—12.75 mi. gra., pavt. and str. on U. S. 117; E. H. Hines Construction Co., Inc., Greenwood, S. C., \$305,494 for roadway and F. A. Triplett, Inc., \$125,595 for str.

Wake-Johnston—12.78 mi. grad. and str. for U. S. 70 relocation; C. C. Mangum, Raleigh, \$154,518 for roadway and Wilson Construction Co., Inc., Salisbury, \$80,470 for str.

Bertie—17.1 mi. grad. and hard-surf. on various sections of county roads in Kelford, Aulander and Connarita; Dickerson, Inc., \$132,886.

Duplin—23.98 mi. surf. on various sections of county roads and school drives in Calypso, Warsaw and Magnolia; Shepherd Construction Co., Atlanta, Ga., \$66,214.

Wayne—14.6 mi. grad. and hard-surf. on various sections of county roads; Wayne Engineering & Construction Co., Inc., Mt. Olive, \$141,480.

Johnston—bridges over Buffalo Creek and Little river; Wilson Construction Co., Inc., Salisbury, \$54,998.

Babarrus—bridge over Southern railway on additional lane of U. S. 29; W. F. Brinkley & Son Construction Co., Granite Quarry, \$56,068.

RALEIGH—White Memorial Presbyterian Church let contract to Davidson & Jones, \$193,000, for masonry church.

RALEIGH—North Carolina State College let contract to T. A. Loving & Co., Goldsboro, \$468,184 for forestry and horticulture building.

RALEIGH—State College of A & E received low bid from Southeastern Construction Co., \$526,631 for alterations and additions to civil and electrical engineering buildings.

RICHMOND COUNTY—County Board of Education let contract to Jesse F. Pier, Rockingham, \$203,300 for Ellerbe Colored High School.

ROANOKE RAPIDS—Albermarle Paper Co. plans \$6,500,000 expansion program, doubling its production of Southern Kraft Papers.

ROBESON COUNTY—Board of Education received low bid from O. W. Godwin, Dunn, \$128,595 for school, St. Paul County.

RUTHERFORDTON—Presbyterian Church Congregation received low bid from R. E. Carpenter & Co., Shelby, \$136,000, for church building.

building.

SALISBURY—Board of Trustees of Salisbury City Schools let contract to Wagoner Construction Co., \$119,750 for alterations and additions to Calvin H. Wiley School.

SMITHFIELD—Board of Trustees of Johnston Memorial Hospital let contract to T. A. Loving & Co., Goldsboro, \$132,642 for nurses home.

TRANSYLVANIA COUNTY—County Board of Education received low bid from Merchant Construction Co., Asheville, \$126,000 for Penrose School.

WADESBORO—Wadesboro Hosiery Mill, Division of Burlington Mills Corp., plans \$1,000,000 expansion program.

WHITEVILLE—G. V. Singletary & Sons let contract to F. K. Phipps, Tabor City, N. C., \$200,000, for grocery warehouse.

WILMINGTON—Housing Authority let contract to Skinner & Ruddock, Charleston, \$1,880,000, for low rent housing project.

WILMINGTON—New Hanover Housing Authority let contract for 36 additional units in Oleander Courts Apartment, \$400,000.

WILSON COUNTY—County Board of Education received combination bid of \$171,200 from Wrenn-Wilson Construction Co. for gymnasiums at Rock Ridge High, Lucama High and Narotoga High Schools.

WINSTON-SALEM—Winston-Salem Teachers College let contract to King Hunter, Inc., \$249,745 for additions and renovations of boys dormitory.

WINSTON-SALEM—City Board of Education received low bid from G. L. Wilson Building Co., Statesville, \$124,200 for addition to Central School.

WINSTON-SALEM—City Board of School Commissioners let contract to Floyd S. Burge Construction Co., \$276,562 for gymnasiums at Hanes High and Gray High Schools.

WINSTON-SALEM—City Board of School Commissioners let contract to Fowler-Jones Construction Co., \$232,265 for gymnasium addition to Reynolds High School.

OKLAHOMA

ATOKA—Board of Education plans school, \$100,000.

BINGER—Caddo Electric Cooperative plans 100 miles of distribution line, improvements including 7 miles of new tie line, \$500,000.

DURANT—State Board of Education plans addition to health and physical educational building and equipment for Southeastern State College, \$40,000.

DURANT—State Board of Education plans addition to old auditorium and additions to classrooms, at Southeastern State College, \$30,000.

ENID—St. Mary's Hospital plans four-story hospital, with office and laboratory facilities, \$1,000,000.

FORT GIBSON—Corps of Engineers, Tulsa, received low bid from M. E. Gillioz, Monett, Mo., \$952,353, for relocation of U.S. Hwy. No. 69, Fort Gibson Dam, Grand Neosho River, Inv. 19.

FORT SILA—Corps of Engineers let contract to Builders Fireplace and Supply Co., Houston, Tex., \$94,912 for installation of

(Continued on page 28)

Three Expressways Urged at St. Louis

Building of three express highways radiating through the city from downtown St. Louis at the estimated cost of \$100,000,000 was urged in a report made by Malcolm Elliott, manager of the St. Louis Urban Area Expressway Report Project.

The report is based on a study by Mr. Elliott's staff in the project sponsored by the city, the State Highway Department and the United States Bureau of Public Roads.

The proposed highways would be the Ozark Expressway, leading southwest from the downtown area to connect with U. S. Highway 66 at Lindbergh boulevard; the Daniel Boone Expressway, leading west from downtown to join the dual-pavement U. S. Highway 40 which now terminates at Brentwood boulevard and

Edgar road, and the Mark Twain Expressway, which would run northwest from the downtown area to connect with the new U. S. Highway 40 which the State Highway Department is now extending eastward toward the Missouri River a short distance upstream from St. Charles where a new highway bridge is planned.

Mr. Elliott recommended that the expressways be scheduled for adoption and construction in a sequence that would provide immediate and substantial benefit as each element is completed.

It was estimated that the Ozark Expressway would cost \$31,761,000 to \$38,011,000, depending on the route selected, and that the cost of the Daniel Boone Expressway would range from \$28,231,000 to \$37,714,000. Three alternate routes are proposed. No estimate was made on the Mark Twain Expressway.

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Southern Construction Projects

Florida Flood Control Work Announced

Work to be contracted during the current fiscal year in the Central and Southern Florida Flood Control Project has been announced by Col. Richard W. Pearson, U. S. district engineer at Jacksonville, Fla.

Congress has appropriated \$6,300,000 for the work this year. This will be augmented by a 15 per cent contribution from local sources. Around \$6,000,000 of the total funds will be available for actual construction of canals and levees, the remaining going for surveys in the 15,000 square miles of land involved around Lake Okeechobee and the Everglades and for original research Colonel Pearson's staff is conducting to establish criteria for design and water control.

Two long sections of levee and canals are to be begun this year. One is a continuation of Levee L-8 extending northwestward from the West Palm Beach Canal to the banks of Lake Okeechobee south of the St. Lucie Canal. Purpose of this work is to complete protection of coastal cities around Palm Beach, preventing Okeechobee and Everglades waters from flooding agricultural areas and the cities.

The other work will be Levees L-33 and L-37, a continuous section running southward along the east side of a big water conservation area to be located southeast of agricultural areas along the shores of Okeechobee. These levees, reaching as far south as Tamiami Trail, will protect the Miami and Fort Lauderdale areas. Intervening sections of coastal land between Lauderdale and Palm Beach are fairly well protected at present.

A two-day conference was held in Pearson's office recently to study the hydrological, geological and weather data so far collected in designing the overall \$208,000,000 project. Decisions growing out of the conference have not yet been formulated. Meanwhile, the Corps of Engineers is having levees constructed at heights intermediate to what may eventually be required.

Among those attending the conference were representatives of the office of Chief of Engineers, including W. H. McAlpine, chairman of the board of review, G. A. Hathaway, member of the board, and F. B. Slichter, chief of the engineering division; Col. B. L. Robinson, division engineer from Atlanta, and Prof. Boris A. Bakhmeteff of Columbia University, and Edmund Friedman of Miami, private engineers employed as consultants on the project.

When the project is completed, the engineers expect to have all water in the area under control to prevent floods and irrigate agricultural lands during dry spells. They will be able to irrigate farm land, or remove surface water, at the rate of three-quarters of an inch per hour.

OKLAHOMA

(Continued from page 26)

oxychloride-composition floor, temporary mess halls.

OKLAHOMA CITY—State Highway Department let contract to Highway Constructors for \$220,000 widening and pvt. project in downtown area.

OKLAHOMA CITY—State Highway Department let contracts for projects in following counties:

Nowata—SAP-102(2), U.S. 66, 4.418 ml. 36-ft. roadbed on new location, 4 reinf. conc. culverts, M. E. Gillioz, Monett, Mo., \$295,425; Creek—SAP-102(2), U.S. 66, 4.399 ml. surf., asph. conc., 6-ft. primed shoulders with grav. surf.; Standard Paving Co., Tulsa, \$304,228; Canadian—FI-F-163(6), U.S. 66, 5.425 ml. 8-in. asph. conc. on 24-ft. traf. lanes, 10-ft. bitum. paved shoulders; Dahlgren & Brooks, \$446,875.

Okmulgee—SAP-274(1), U.S. 66, 1.117 ml. 32-ft. roadbed culvert extension; J. A. Raines, Muskogee, \$59,745.

Okmulgee—SAP-274(1), U.S. 66, 1.111 ml. 8-in. asph. conc. pvt., surf. 4-ft. sod shoulders; Anchor Construction Co., Muskogee, \$67,260.

Okmulgee—SAP-274(2), U.S. 66, 0.775 ml. 32-ft. roadbed, 3-span 177-ft. I-beam bridge on Coon Creek, 180-ft. detour bridge, culvert extension; J. A. Raines, \$220,436.

Okmulgee—UI-602(1), U.S. 66, 1.511 ml. 7-in. asph. conc. on 2-24-ft. traf. lanes, 9-in. special sub-base, 6-in. stab. shoulders, double bitum. pvt.; W. E. Steelman, Oklahoma City, \$268,248.

Okmulgee—FI-602(2), U.S. 66, 4.683 ml. same type construction; W. E. Steelman, \$600,277.

Lincoln—SAP-764(3), U.S. 66, 0.942 ml. 34-ft. roadbed, 5-span 310-ft. I-beam bridge on Deep Fork, Reinf. conc. culvert; J. A. Raines, \$193,457.

Beckham—SAP-931(1), U.S. 66, 1.156 ml. roadbed of variable width, widening 20-ft. conc. pvt., widening 3-span 102-ft. I-beam bridge and approach slabs on Elk Creek; Highway Constructors, Oklahoma, \$220,436.

Okmulgee—SAP-272(2), U.S. 66, 0.737 ml. 8-in. asph. conc. pvt., 24-ft. wide, 4-ft. sod shoulders; Anchor Co., \$36,857.

Nowata—F-190(1), U.S. 60, 1.076 ml. 7-in. asph. conc. pvt., primed shoulders; General Construction Corp., Oklahoma City, \$62,000.

Tulsa—S-H 33, 1.007 ml. 94-ft. roadbed, 7-in. asph. conc. pvt. on 2-24-ft. traf. lanes, 8-ft. primed shoulders with grav. surf.; Layman & Sons, Tulsa, \$163,163.

Garfield—SAP-1068(1), U.S. 81, 3.415 ml. variable width roadbed, 7-in. asph. conc. pvt., 24-ft. wide and 9-in. asph. conc. pvt. on 2-24-ft. traf. lanes, 2 reinf. conc. culverts; H. D. Youngman, Baxter Springs, Kansas, \$466,649.

OKLAHOMA CITY—Canitol Steel & Iron submitted low bid of \$58,290 for hangar, Oklahoma City Municipal Airport No. 2 near Bethany City.

FONCA CITY—H. B. Anderson let contract to Robertson Construction Co. for business building, \$37,000.

TULSA—City let contract to Guy H. James Construction Co., Oklahoma City, \$2,407,575, for Spavinaw Dam project and Tiawah Tunnel approach.

VINITA—Kamo Electric Cooperative, Inc. plans 1,125 miles of 69 kv transmission lines, \$10,533,000.

SOUTH CAROLINA

SOUTH CAROLINA—Bureau of Public Roads, Washington, D. C. announced state will receive allocations of \$2,393,911 for Federal-Aid highway system, \$1,977,140 for secondary or federal roads and \$651,251 for urban highways.

ABBEVILLE—Abbeville Mills, Div. of Deering Milliken Co., let contract to Daniel Construction Co., Greenville, for \$150,000 boiler plant.

AIKEN—Housing Authority let contract to W. Herbert Stiefel for Stoney Homes, Project S-C 7-2, \$329,488.

BAMBERG—Barnberg Court House Commission let contract to General Contracting Co., Charleston, \$136,710 for additions and alterations to County Court House.

CHARLESTON—Charleston Evening Post and The News and Courier let contract to Charleston Constructors, Inc., \$675,000 for newsmen publishing plant, Columbus St.

CHARLESTON—Plans have been announced for new bridge across Ashley River on Hwy. 17, to be known as World War II Memorial bridge, \$2,500,000.

CHARLESTON—Sears, Roebuck & Co. plan new store \$1,200,000.

CHARLESTON—U. S. Post Office will construct garage, \$100,000.

CHARLESTON—Civil Aeronautics Admin-

istration allocated \$228,500 for a radar device for controlling air traffic and \$30,000 for an automatic direction finder for planes to Charleston Municipal Airport.

CHESTER—Chester County School District let contract to George A. Creed & Son, Columbia, \$140,473 for alterations and additions to Lewisville High School.

COLUMBIA—State Highway Department let contracts for projects in following counties:

AIKEN—Doc. No. 2,299; Joseph W. Barnwell, Jr., \$37,608.

Charleston—Doc. 10,348, etc.; Banks Construction Co., Naval Base, \$208,830 for Alt. 1; Greenwood—Doc. 25,260; C. Y. Thomason Co., Greenwood, \$66,146.

Cherokee and Spartanburg—Doc. 11,265, etc.; Sloan Construction Co., Greenville, \$143,931.

Hampton—Doc. 25,258, etc.; Knox Brothers, \$179,854.

Laurens—Doc. 30,289, 2, etc.; Bowe Contracting Co., \$252,425.

Greenville—S.C. Doc. 23,270, 2, Rd. 62, grad., drain, and asph. conc. surf. on macadam base with conc. curb and gutter and sidewalks on 0.366 ml.; Sloan Construction Co., Inc., Greenville, \$53,303.

Lexington—S.C. Doc. Nos. 32, 303 Parts 1&2 & 32,304, F.A. Proj. S-553(1), Rds. 29, 51, 83, 92, 223 & 224, grad., bitum. surf., 4.094 ml. Rds. 32 and 32.20, Rds. 132, 135, 108, 170, 170 & 107, grad., and bitum. surf., 18.681 ml.; B. J. Jones, Windsor, Ga., \$183,634.

McCormick-Greenville—S.C. Doc. Nos. 33,248, 33,249, 33,250, 33,251, 33,252, F.A. Proj. S-530(1), Rds. 35, 36, 65, 104 through 108, 119, 121, 120 & 132, grad. and bitum. surf., 6.228 ml.; Knox Brothers, Inc., Thomson, Ga., \$74,389.

Orangeburg—S.C. Doc. Nos. 38,341, 38,351, 33,348 & 33,358, F.A. Projs. Nos. S-486(1) & S-554(1), Parts 1&2, Rds. 73, 39, 63 & 135, grad. and bitum. surf., 15.398 ml.; Robert Lee Inc., Manning, \$125,261.

Lexington-Richland—S.C. Doc. Nos. 32,400, 216,3, F.A. Proj. U-2570(1), U.S. Rt. 21, furnishing and erecting steel superstructures for Blossom Street bridge over Congaree River; McMeekin Construction Co., Cheraw, \$563,000.

COLUMBIA—State Highway Department received low bids for projects in following counties:

Anderson—S.C. Doc. Nos. 4,331, 4,332 Parts 1&2, 4,333 Pts. 1&2, 4,334, 4,335, 4,336 & 4,342, F.A. Proj. Nos. S-502(1), S-531(1) & S-501(1), Rds. 412 & Rds. 180, 253, 24,269, 108, 170 & 107, grad., and bitum. surf., 18.681 ml.; B. J. Jones, Windsor, Ga., \$183,634.

Chester—S.C. Doc. 12,249, Pts. 1&2, F.A. Proj. U-2569(1) Pts. 1&2, Rt. 72, grad., macadam base and bitum. surf., 4.073 ml.; Suber & Co., Inc., Whitmire, \$174,919.

Edgefield-Greenville-Saluda—S.C. Doc. Nos. 19,250, 19,251, 19,252, 24,269, 41,252 & 41,261, Rds. 59, 25, 38, 32, 21, 69, 107, 113, 139 & 171 through 179, grad. and bitum. surf., 13.916 ml.; Spotts & Co., Newberry, \$52,598.

Greenville—S.C. Doc. Nos. 23,317, 23,313 & 23,323, F.A. Proj. S-428(1), Rds. 103, 52 & 30, grad. and bitum. surf., 1.810 ml., 2.760 ml. on Rd. 52 and 0.826 ml. on Rd. 30; Sloan Construction Co., \$70,253.

Newberry—S.C. Doc. Nos. 37,247, 36,248 & 36,250, Rds. 71, 52,43 & 17, grad., drain, and bitum. surf., 12.944 ml.; Spotts & Co., \$111,760.

Oconee—S.C. Doc. Nos. 37,302, Pts. 1,2,3&4, 37,306 & 37,309, Rds. 70, 74, 78, 190, 189 & 65, grad., bitum. surf., 12.964 ml.; Ballenger Paving, Greenville, \$138,380.

York—S.C. Doc. Nos. 46,287, 42,292 Pts. 1&2 & 42,293, F.A. Proj. S-507(1), Rds. 77, 68, 105, 107, 108, 109 & 111, grad., drain, and bitum. surf., 5.553 ml.; Spotts & Co., \$67,510.

Saluda—S.C. Doc. 41,260, F.A. Proj. F-416(1), Rds. 43, 250-ft. reinf. concrete bridge over Little Saluda River with 0.464 ml. graded and bitum. surf. approaches and 170-ft. reinf. conc. bridge over Richland Creek with 76-ft. untreated timber detour bridge and detour road; Joseph W. Barnwell, Jr., \$72,773.

COLUMBIA—State Highway Department received low bid from M. B. Kahn Construction Co., \$1,303,578 for highway office building.

COLUMBIA—Board of Trustees let contract to H. L. Eargle Construction Co., Columbia, \$274,260 for Richland County Public Library.

COLUMBIA—Hancock Buick Co. received low bid from General Construction Co., Palmetto Bldg. Columbia, \$129,355 for sales and service building.

COLUMBIA—Central Electric Power Cooperative, Inc., received low bid from R. H.

(Continued on page 30)

Unit Prices—Georgia Grading, Paving, Widening

Federal Aid Project No. F-037-2(1), 2.570 and .2 miles of grading, paving and widening, McDonough to Jackson Road and widening present S.R. 42 in McDonough, in Henry County, Georgia.

Items	Quantity	Ballenger Paving Co.		Wainer Construction Co., Inc.		M. J. Carroll Contracting Co.		Wright Contracting Co.	
		Greenville, S. C.	Amount	Valdosta, Ga.	Amount	Leesburg, Fla.	Amount	Columbus, Ga.	Amount
Clearing and Grubbing	19,402 Acres	Lump	\$2,800.00	Lump	\$2,000.00	Lump	\$3,500.00	Lump	\$1,500.00
Random Clearing, Grubbing	2.50 Acres	\$60.00	150.00	\$125.00	312.50	\$50.00	125.00	\$100.00	250.00
Uncl. Excav. & Borrow	21,783 Cu. Yds.	5.45	9,822.35	3.35	7,624.05	5.55	11,880.65	3.37	8,059.71
Excav. for Curb. & Minor Struc.	4,352 Cu. Yds.	1.00	4,352.00	1.00	4,352.00	2.50	10,880.00	1.50	6,528.00
Overhaul on Excav.	37,906 Sta. Yds.	.005	189.53	.005	189.53	.005	189.53	.005	189.53
15" Std. Str. Reinf. Conc. Pipe C.D.	532 Lin. Ft.	2.50	1,330.00	2.25	1,212.00	2.40	1,324.80	1.80	953.60
15" Std. Str. Reinf. Conc. Pipe Stub & Long	2,024 Lin. Ft.	2.50	5,060.00	2.25	4,554.00	2.40	4,857.60	2.25	4,554.00
18" Std. Str. Reinf. Conc. Pipe C.D.	327 Lin. Ft.	3.00	981.00	2.75	895.25	2.75	895.25	3.00	981.00
18" Std. Str. Reinf. Conc. Pipe Stub & Long	2,937 Lin. Ft.	3.00	8,811.00	2.75	8,076.75	2.75	8,076.75	2.90	8,517.30
24" Std. Str. Reinf. Conc. Pipe C.D.	170 Lin. Ft.	4.75	807.50	4.00	680.00	4.75	807.50	4.15	6,951.25
24" Std. Str. Reinf. Conc. Pipe Stub & Long	1,676 Lin. Ft.	4.75	7,966.25	4.00	6,700.00	4.75	7,956.25	5.75	1,512.25
30" Std. Str. Reinf. Conc. Pipe C.D.	263 Lin. Ft.	7.00	1,841.00	5.45	1,433.35	6.00	1,578.00	5.75	1,484.00
30" Std. Str. Reinf. Conc. Pipe Stub	32 Lin. Ft.	7.00	224.00	5.45	174.40	6.00	192.00	5.75	184.00
16 Ga. Bit. & Conc. Corr. Met. Pipe	64 Lin. Ft.	4.50	288.00	3.42	218.88	3.60	230.40	3.50	224.00
43" Span 14 Ga. Corr. Met. Arch	9.00	180.00	1,620.00	7.00	140.00	6.20	124.00	7.00	140.00
Met. Pipe Arch C.D. and Stub	197 Lin. Ft.	10.50	2,068.50	9.30	1,832.10	8.50	1,674.50	9.00	1,773.00
Met. Pipe Arch Long	73 Lin. Ft.	9.50	693.50	7.70	562.10	7.00	511.00	8.00	584.00
Met. Pipe Arch—Stub and Long	112 Lin. Ft.	7.00	784.00	5.50	616.00	5.00	560.00	5.75	632.00
8" Std. C.I. Pipe Sanitary Sewer	2.00	50.00	100.00	50.00	100.00	40.00	80.00	6.00	120.00
4" Stand. C.I. Pipe	90 Lin. Ft.	3.00	270.00	2.00	180.00	2.50	225.00	4.00	360.00
4" Class "B" Conc. Pipe, Stub	40 Lin. Ft.	1.00	40.00	.75	30.00	1.75	70.00	2.00	80.00
4" x 4" Tee Connections	6 Ea.	5.00	30.00	18.00	108.00	15.00	90.00	12.00	72.00
Curb. Pipe Relaid to Curb.	15 Lin. Ft.	3.00	45.00	1.50	22.50	3.00	45.00	5.00	75.00
Curb. Pipe Removed C.D. or S.D.	2,995 Lin. Ft.	.80	2,396.00	.75	2,246.25	.80	2,396.00	1.00	2,995.00
Remove 8" Sanitary Sewer	20 Lin. Ft.	1.00	20.00	.50	10.00	1.50	30.00	1.00	20.00
Cl. "B" Conc. Headwalls, Ret. Walls	110.37 Cu. Yds.	50.00	5,518.50	46.50	5,132.20	48.00	5,297.76	45.00	4,966.65
Cl. "A" Conc. Headwalls, Ret. Walls	75.18 Cu. Yds.	42.00	3,167.40	40.50	3,038.25	34.00	3,669.12	45.00	3,383.55
Bar Reinf. Steel	6,019 Lbs.	12	722.28	11	662.09	11	662.09	12	722.28
Remov. Cl. "B" Conc. Hdwl., Ret. Walls	43.71 Cu. Yds.	10.00	437.10	10.00	437.10	8.00	349.68	10.00	437.10
Conc. R/W Markers	38 Ea.	5.50	209.00	4.00	152.00	4.50	171.00	5.00	190.00
Posts for F.A.P. Markers	12 Ea.	15.00	180.00	10.00	120.00	7.50	90.00	10.00	120.00
Plates for F.A.P. Markers	2 Ea.	15.00	30.00	10.00	20.00	7.50	15.00	10.00	20.00
Arrows for F.A.P. Markers	2 Ea.	15.00	30.00	10.00	20.00	7.50	15.00	10.00	20.00
Remov. Rock Ret. Walls	22 Cu. Yds.	10.00	220.00	7.50	165.00	6.00	132.00	2.00	40.00
Rebuild Rock Ret. Walls	440 Cu. Yds.	25.00	11,000.00	20.00	8,800.00	20.00	8,800.00	30.00	13,200.00
Remov. Conc. Block Ret. Walls	4.03 Cu. Yds.	10.00	40.30	5.00	20.15	8.00	32.24	5.00	20.15
Rebuild Conc. Block Ret. Walls	4.03 Cu. Yds.	30.00	120.90	15.00	60.45	30.00	120.90	40.00	161.20
Remove Guard Rail	204 Lin. Ft.	.50	102.00	.25	51.00	.35	71.40	.30	61.20
Reset Guard Rail	164 Lin. Ft.	1.00	164.00	1.40	229.60	1.00	164.00	.75	123.00
Remove Conc. Pave.	958 Sq. Yds.	1.00	958.00	.60	574.80	.80	774.80	.50	479.00
Remove Conc. Curb	1,238 Lin. Ft.	.50	619.50	.25	309.75	.20	247.60	.30	371.70
Remove Granite Curb	63 Lin. Ft.	.50	31.50	.25	15.75	.20	12.60	.30	15.75
Remove Conc. Steps	20.14 Cu. Yds.	10.00	201.40	10.00	201.40	8.00	161.12	10.00	301.40
Remove Brick Steps	2.5 Cu. Yds.	5.00	12.50	7.50	18.75	5.00	12.50	5.00	12.50
Remove Conc. Sidewalk	2,206.1 Sq. Yds.	.50	1,103.05	.30	661.83	.25	551.53	.25	551.52
Remove Brick Sidewalk	2 Sq. Yds.	.50	1.00	1.00	2.00	.50	1.00	.25	.50
Remove Flagstone Sidewalk	6.1 Sq. Yds.	3.00	18.30	3.50	21.30	3.00	18.30	1.50	9.15
Remove Conc. Junction Box	1 Ea.	25.00	25.00	10.00	10.00	25.00	25.00	25.00	25.00
Remove Brick Drop Inlet	1 Ea.	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
Remove Conc. Drop Inlet	2 Ea.	25.00	50.00	25.00	50.00	25.00	50.00	25.00	50.00
Remove Class "A" Conc.	20.67 Cu. Yds.	15.00	310.05	10.00	206.70	10.00	206.70	10.00	206.70
Remove Brick Manhole	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
Remove Conc. Slab	0.5 Cu. Yds.	20.00	10.00	10.00	10.00	20.00	10.00	5.00	5.00
Remove Catch Basin	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
Remove Brick & Conc. Platform	10.84 Cu. Yds.	1.00	10.84	1.00	10.84	1.00	10.84	1.00	10.84
Remove Brick Headwalls	28.6 Cu. Yds.	10.00	286.00	4.50	128.70	6.00	171.60	5.00	143.00
Remove Conc. R/W Marker	1 Ea.	2.00	2.00	1.00	1.00	1.50	1.50	1.00	1.00
Remove Conc. Raised Edge Curb	345 Lin. Ft.	.40	138.00	.25	86.25	.20	34.50	.25	86.25
Conc. Drop Inlet Std. 1019	130.00	8.00	1,040.00	130.00	8,060.00	130.00	8,060.00	140.00	8,680.00
Add. Depth for Drop Inlet	47.04 Lin. Ft.	25.00	1,176.00	25.00	1,176.00	18.00	846.72	20.00	940.80
Conc. Drop Inlet Std. 1019	5 Ea.	250.00	1,250.00	140.00	700.00	225.00	1,125.00	200.00	1,000.00
Add. Depth for Inlets	6.79 Lin. Ft.	35.00	237.65	25.00	169.75	18.00	122.22	40.00	271.60
Conc. Drop Inlet Std. 1019	1 Ea.	100.00	100.00	125.00	125.00	125.00	125.00	140.00	140.00
Conc. Drop Inlet Std. 1019	125.00	125.00	125.00	140.00	140.00	150.00	150.00	140.00	140.00
Conc. Junction Boxes	4 Ea.	120.00	480.00	80.00	320.00	100.00	400.00	200.00	800.00
Add. Depth for Junction Boxes	0.50 Lin. Ft.	20.00	10.00	30.00	15.00	18.00	9.00	30.00	15.00
Conc. Drop Inlet	4 Ea.	150.00	600.00	130.00	520.00	225.00	900.00	150.00	600.00
Conc. Drop Inlet	2 Ea.	160.00	320.00	130.00	260.00	125.00	250.00	150.00	300.00
Sanitary Manholes Adjusted	16 Ea.	25.00	400.00	25.00	400.00	25.00	400.00	20.00	320.00
Catch Basins Adjusted to Grade	2 Ea.	35.00	70.00	25.00	50.00	25.00	50.00	20.00	40.00
Catch Basin Modified in a Junction Box	1 Ea.	50.00	50.00	50.00	50.00	75.00	75.00	50.00	50.00
Conc. Spillways Std. 9013, Type-3	3 Ea.	70.00	210.00	100.00	300.00	60.00	180.00	75.00	225.00
Conc. Slope Drain	18 Lin. Ft.	4.00	72.00	3.00	54.00	3.00	54.00	2.00	36.00
10" Plain Cement Conc. Pave.	1,388 Sq. Yds.	4.50	6,246.00	4.44	6,207.12	4.06	5,675.88	4.30	6,011.40
8" Plain Cement Conc. Pave.	24,877 Sq. Yds.	3.20	79,606.40	3.67	91,298.59	3.45	85,825.65	3.60	89,557.20
8" Plain Cement Conc. Pave.	18,634 Sq. Yds.	3.20	59,828.80	3.67	68,350.58	3.44	64,066.56	3.70	69,096.80
6" x 18" Conc. Header Curb	290 Lin. Ft.	1.20	348.00	1.00	290.00	1.25	362.50	1.50	435.00
6" Conc. Drive Pav.	916.08 Sq. Yds.	4.14	3,792.57	3.50	3,206.28	3.75	3,435.30	4.00	3,664.32
6" Perf. Corr. Met. Underdrain	1,000 Lin. Ft.	1.10	1,100.00	1.15	1,150.00	1.75	1,750.00	1.50	1,500.00
4" Conc. Sidewalk	11,030.37 Sq. Yds.	2.27	25,038.94	2.40	26,472.88	2.57	27,575.93	2.50	27,575.92
6" Conc. Sidewalk	559.74 Sq. Yds.	4.00	2,238.96	3.50	1,959.09	3.35	1,875.13	3.50	1,959.09
6" Doweled Integr. Conc. Curb	21,446 Lin. Ft.	.50	10,723.00	.45	9,655.70	.50	10,723.00	.60	12,867.60
6" Conc. Isl. with Raised Edge	8 Cu. Yds.	25.00	200.00	60.00	480.00	35.00	280.00	25.00	200.00
6" Conc. Isl. with Verr. Edge	8 Cu. Yds.	20.00	160.00	60.00	480.00	30.00	240.00	20.00	160.00
Cl. "B" Conc. Steps	19.90 Cu. Yds.	70.00	1,393.00	60.00	1,194.00	60.00	1,194.00	80.00	1,592.00
Cl. "B" Conc. Step Curb	71.33 Cu. Yds.	45.00	3,209.85	60.00	4,279.80	45.00	3,209.85	35.00	2,486.55
Seed, Grass Plots and Shoulders	13,750 Sq. Yds.	.05	687.50	.04	550.00	.04	550.00	.04	550.00
Finishing and Dressing	13,750 Sq. Yds.	.04	550.00	.04	550.00	.05	687.50	.03	412.50
Subgr. Treat. Mat.	682 Cu. Yds.	.50	341.00	.75	511.50	.80	546.00	1.00	682.00
Overhaul on Subgr. Treat. Mat.	2,512 U. Yds.	.04	100.48	.05	125.60	.05	125.60	.10	251.20
Subgr. Blanket Mat.	7,054 Cu. Yds.	.60	4,232.40	.75	5,290.50	.55	3,879.70	.75	5,290.50
Overhaul on Sand for Subgr. Bl.	31,821 Cu. Yds.	1.00	31,821.00	.55	17,501.55	.55	17,501.55	.60	19,092.60
Stripe Painting—Yellow	30.00	1.00	30.00	1.00	30.00	1.00	30.00	1.00	30.00
Remove Iron Fence	103 Lin. Ft.	.25	25.75	.25	25.75	.50	51.50	1.00	103.00
Replace Iron Fence	103 Lin. Ft.	1.00	103.00	.50	51.50	1.00	103.00	2.00	206.00
Remove U.S.C.&G. Bench Mark	1 Ea.	10.00	10.00	10.00	10.00	10.00	10.00	5.00	5.00
Reset U.S.C.&G. Bench Mark	1 Ea.	50.00	50.00	10.00	10.00	30.00	30.00	10.00	10.00
2" Galv. Wrought Iron Pipe Handrail	264 Lin. Ft.	7.00	1,848.00	2.25	594.00	5.00	1,320.00	1.50	396.00
Water Meter Boxes Adjusted to Grade	27 Ea.	1.00	27.00	5.00	135.00	10.00	270.00	7.00	189.00
Obtiteration of Old Roads	10.81 Sq. Ft.	10.00	108.10	10.00	108.10	8.00	86.48	15.00	162.15
Loose Sod for Back Slopes	4,091 Sq. Yds.	.50	2,045.50	.50	2,045.50	.18	736.38	.50	2,045.50
Water for Grassing	4 M. Gals.	2.00	8.00	2.00	8.00	2.00	8.00	2.00	8.00
First Application Fertilizer	0.42 Tons	55.00	23.10	80.00	33.60	80.00	33.60	60.00	25.20
Second Application Fertilizer	40 Lbs.	.35	14.00	.60	24.00	1.00	40.00	.40	16.00

TOTAL \$287,251.38 \$296,621.63 \$303,271.69 \$303,895.51

Southern Construction Projects

SOUTH CAROLINA

(Continued from page 28)

Boulogny, \$513,102, for REA line, Sec. 3.

COLUMBIA—South Carolina Electric and Gas Company plans steam generating plant between Columbia and Aiken, S. C., with capacity of 300,000 kilowatt hours; first unit, \$12,000,000.

COLUMBIA—Central Electric Power Cooperative, Inc., received low bid from Roy Richards Construction Co., \$720,995, completion of Pinopolis-Columbia Lines and transformers & Oil Circuit breakers.

COLUMBIA—City received low bid from Kahn & Jackson, Columbia, \$169,091 for sanitary sewers.

FORT JACKSON—Corps of Engineers, Savannah, Ga., let contract to Dickerson, Inc., Monroe, N. C., \$99,331 for paving.

GLOVERVILLE—Housing Authority received low bid from Henry A. Ivey, Inc., Atlanta, Ga., \$657,685, for low rent housing project, Valley Homes.

GREEN—City let contract to Kahn and Jackson, Inc., Columbia, \$87,313 for water main and additions to water distribution.

LAURENS—City received low bid from Spong Construction Co., Columbia, \$119,495 for Health Center.

LIBERTY—Woodside Mills, Greenville, let contract to Potter-Shackelford Construction Co., Greenville, \$55,000 for weave room extension.

MONCK'S CORNER—United Piece Dye Works, Lodi, N. J., plans \$1,000,000 finishing, dyeing and printing plant at Hanahan Station in Berkeley County.

OLANTA—Baptist Church Congregation received low bid from Carter-Miot Construction Co., \$93,744, for church and Sunday-school Building.

PICKENS—Poinsett Lumber and Manufacturing Co. let contract to Daniel Construction Co., Greenville, for addition, \$150,000.

ROCK HILL—Board of Education let contracts for school buildings as follows: high school, George A. Creed & Son, Columbia, \$151,269; cafeteria and library, George A. Creed & Son, \$92,277; cafeteria, Central Construction Co., \$64,346; addition to Northside School, Carter-Miot Construction Co., \$102,950.

SHAW AIR FORCE BASE—Col. P. K. Morrill, Commander, jet fighter base, plans 500 unit housing project, \$4,000,000.

SPARTANBURG—Housing Authority let contract to McCoy-Helgeson Co., Greenville, \$919,000.

SUMTER—Sumter County Board of Education plans high school additions, \$568,243.

UNION—City received low bid from Spong Construction Co., Columbia, \$66,712 for Health Center.

TENNESSEE

TENNESSEE—Bureau of Public Roads, Washington, D. C., announced state will receive allocations of \$3,782,775 for Federal-Aid highway system, \$2,949,921 for secondary roads and \$1,408,270 for urban highways.

ALTON PARK, STA. CHATTANOOGA—Tennessee Products and Chemical Corp., Nashville, plans chlorine manufacturing plant, \$3,000,000.

CHATTANOOGA—City Commission plans hangar at Lovell Field, \$80,000.

CHATTANOOGA—Housing Authority received low bid from Thompson & Street Co., Charlotte, N. C., \$4,325,860, for 400 unit housing project.

CHATTANOOGA—Stein Construction Co. has contract for water distribution system

for Walden's Ridge Community, \$340,000.

CLARKSVILLE—Housing Authority received low bid from Clark Construction Co., Owensboro, \$1,719,691, for low rent housing project.

KNOXVILLE—Housing Authority let contract to Foster & Creighton, Nashville, \$3,734,000, for low rent housing project, Western Heights Addition.

LIVINGSTON—Overton County Board of Education plans eight classrooms at Independence School, \$75,000.

MEMPHIS—Corps of Engineers let contract to Forcum-James Co., Dyersburg, \$432,050, for dressing and preparation of slopes, asphalt, topsoiling and sodding on closure dam of Memphis Harbor Project.

MEMPHIS—Baptist Hospital plans \$5,500,000 addition.

MEMPHIS—E. I. duPont de Nemours & Co. let contract to Forcum-James Co., Dyersburg, for \$7,500,000 sodium cyanide plant at Fite Road and Highway 51.

MEMPHIS—Corps of Engineers let contract to W. L. Sharpe Contracting Co., \$277,000 for Section 7, Memphis, Wolf River and Nonconah Creek Project.

NASHVILLE—State received low bid from Foster & Creighton Co., Nashville, Tenn., & MacDonald Construction Co., St. Louis, Mo., \$7,576,000 for state office building.

NASHVILLE—State has plans for library, \$2,500,000.

NASHVILLE—Housing Authority received low bid from Cowan Lumber & Planing Mill Co., Dickson, Tenn., \$1,650,546, for low rent housing project, Ten-S-3.

OAK RIDGE—U. S. Atomic Energy Commission received low bid from V. L. Nicholson Co., Knoxville, \$170,529 for health physics waste building.

OAK RIDGE—U. S. Atomic Energy Commission let contract to Lang Construction Co., Hampton, Va., \$60,236 for Portal Bldg.

SEWANEE—University of South has plans for Gallor Memorial Hall, \$600,000.

SHELBYVILLE—Duck River Electric Membership Corp. let contract to L. O. Brayton and Co., Dyersburg, Tenn., \$353,038, for 250 miles of line.

TRENTON—Brown Shoe Co., St. Louis, Mo., plans distribution warehouse, \$1,000,000.

TULLAHOMA—Westinghouse Electric Corp., Pittsburgh, Pa., has order from U. S. Air Force for \$20,000,000 worth of electrical equipment for a new wind tunnel to test full size jet engines, guided missiles, and wing sections and fuselages of aircraft, Arnold Engineering Development Center.

TEXAS

TEXAS—Bureau of Public Roads, Washington, D. C., announced state will receive allocation of \$11,425,744 for Federal-Aid highway systems, \$7,633,111 for Secondary or Federal roads and \$4,269,823 for Urban construction.

TEXAS—State Highway Department, Austin, announced \$68,335,000 will be available for state highways during 1951 and 1952.

TEXAS AND MEXICO—International Boundary & Water Commission, U. S. & Mexico, El Paso, let contract to Constructors Intercontinental, S.A., of Mexico, subsidiary of C. F. Lytle & Co., et al., at \$8,525,983 pesos (about \$7,900,000) for Mexico part of Falcon Dam and Power plant project; C. F. Lytle & Co., P. O. Box 206, Sioux City, Iowa, has contract at \$7,801,064 for U.S. part of project.

AUSTIN—State Highway Department received low bids for projects in following counties:

Orange—Proj. FI-328(4), Hwy. U.S. 90, superstructure for Neches River bridge; Texas Construction Co., Dallas, \$2,087,988.
Cameron—Proj. C-630-2-3, Hwy. FM 106, Arroyo Colorado bridge and approaches; Texas Construction Co., Dallas, \$318,328.
Tom Green—Proj. C-15, Hwy. U.S. 67, bridge widening and approaches; Thomas & Ratliff, Rogers, \$127,389.

Mason—Proj. R-1102-3-1, Hwy. FM 1222, grad., str., found. course and 2-course surf. treat.; McKown & Sons, Austin, \$89,219.

Taylor—Proj. R-663-3-1, Hwy. FM 1235, grad., str., found. course and 1-course surf. treat.; Harry Campbell, Ft. Worth, \$61,461.

Hunt—Proj. V-1592-2-1, Hwy. FM 1562, grad., str., found. course and 2-course surf. treat.; R. W. McKinney, Nacogdoches, \$122,288.

Rockwall—Proj. R-1290-1-1, R-1290-2-1 & R-1017-2-1, Hwy. FM 1141, 1895 & 1395, grad. and str.; J. F. Buckner & Sons, Cleburne, \$63,675.

Denton—Proj. R-619-5-1, Hwy. FM 1383, grad., str., found. course and 2-course surf. treat.; Spencer Construction Co., Carrollton, \$103,828.

Chambers—Proj. R-1024-2-1, Hwy. FM 1405, grad., str., flex. base and 1-course surf.

International Minerals Building of Functional Design

Functions of the departments it will house have dictated the design of the new brick and glass office building now being erected at Bartow, Fla. by International Minerals & Chemical Corp., according to Franklin Farley, vice president in charge of the phosphate division.

Florida phosphate headquarters of International will be moved from Mulberry to Bartow when the new offices are finished in order to be nearer the center of the corporation's Florida operations.

"Separate wings for administrative, engineering, accounting and personnel departments will coordinate departmental activities and result in a minimum amount of traffic in the hallways," Mr. Farley said. "This will be an improvement over the division's present office, which was constructed originally as a home 40 years ago. The present office is four times the size of the original building. However, production in our Florida Phosphate Division has grown 10 times since the old office was first occupied and we now have about 75 people in the Mulberry office."

The new building will be of completely fireproof concrete construction with reinforced steel. It has been designed all on one floor with windows affording best material lighting and will have such modern features as climate control, a special noise control area in the accounting department, acoustical treatment throughout, fluorescent lighting, and use of color engineering principles in decorating.

A cold water air conditioning system aided by heating and ventilating facilities will provide individual control of the "climate" at various points through the building. Heat-absorbing plate glass will

restrict transmission of heat and help keep the offices comfortable on the hottest days.

Since many people visit the personnel department, a meeting room that will seat 150 will be part of the personnel wing. The personnel department will also contain separate interview rooms. An employee lounge will be connected to a covered terrace.

The building will have a total floor area of 20,000 square feet and will be built on a 30-acre tract just south of Bartow's city limits. It is expected to be completed in August, 1951, and will cost approximately \$350,000 including furnishings.

Robert Law Weed & Associates of Miami, designers of the University of Miami, are the architects. The contractor is Paul Smith, of Tampa, Fla.

Mr. Farley also revealed construction of a half-million-dollar service center and warehouse is proceeding in the Noralyn plant area near Bartow. Completion is scheduled for about May 1, 1951. It will be the most modern maintenance center of its type in the southeast, he said. Light and heavy mechanical facilities, electric and automotive shops, and a warehouse are included.

The structure will have a floor area of 42,700 square feet and will accommodate 150 workers.

All functions will be integrated and coordinated through general offices located so everyone can easily get into his own area.

"The structure was designed from the inside out," Mr. Farley said. "We knew what we wanted it to do, and it was designed around those functions."

treat.: Brittain & Gibbins, Ft. Worth, \$161,842.

Galveston—Proj. FI-466(18), Hwy. U.S. 75, FM 517 grade separation; Austin Road Co., Dallas, \$316,007.

Jack—Proj. S-873(7), Hwy. SH-148, partial grad., flex. base and 2-course surf. treat.; Harry Campbell, Ft. Worth, \$145,034.

Webb—Proj. S-401(5) & (6), Hwy. S.H. 202, flex. base and 1-course surf. treat.; H. B. Zachry, San Antonio, \$494,872.

Lipscomb—Proj. V-460-2-1, Hwy. FM 1453, grad., str., found. course and 1-course surf. treat.; Ernest Lloyd, Ft. Worth, \$85,998.

Cameron—Proj. R-873-1-2, etc.; Hwy. FM 507, 732, 800, etc.; grad. str., flex. base & 1-course surf. treat.; E. B. Darby & Co., Pharr, \$251,576.

Midland—Proj. R-887-1-2 & R-1369-1-1, Hwy. FM 307 & 1213 grad., str., found. course and 1-course surf. treat.; Strain & Brown, Inc., San Angelo, \$67,759.

Lavaca—Proj. R-1007-1-2 & R-1445-1-1, Hwy. FM 532 & 1298, grad., str., roadbed treat.; Killian House Co., San Antonio, \$73,221.

McLennan—Proj. C-398-3-8, Hwy. SH 317, flex. base and 2-course surf. treat.; McKown & Sons, \$489.

Waller—Proj. R-409-3-1, Hwy. FM 1488, grad., str., flex. base and 1-course surf. treat.; J. W. Perry, San Antonio, \$97,712.

Dallas—Proj. C-138-1-1, Hwy. U.S. 75, grad. and surf.; Uvalde Construction Co., Dallas, \$52,263.

Medina—Proj. R-1436-1-1, Hwy. FM 1343, grad., str., flex. base and 2-course surf. treat.; Schwoppe Brothers, San Antonio, \$90,093.

Montague—Proj. R-1352-2-1, Hwy. FM 455, grad., str., flex. base and 1-course surf. treat.; Spencer Construction Co., Inc., Carrollton, \$61,721.

Tyler—Proj. R-703-3-1, Hwy. FM 1417, grad., str., flex. base and 1-course surf. treat.; Moore Brothers Construction, Lufkin, \$92,063.

Ellis—Proj. R-1393-1-1, R-1394-2-1, Hwy. FM 1386 & 1287, grad., str., flex. base and 1-course surf. treat.; L. H. Lacy Co., Dallas, \$119,085.

Ford Bend—Proj. R-1253-2-2, Hwy. FM 1094, grad., str., soil asph. base and 2-course surf. treat.; J. F. Buckner & Sons, Cleburne, \$74,297.

Collingsworth & Wheeler—Proj. R-797-8-1, R-1347-1-1, R-761-4-2 & V-1483-1-1, Hwy. FM 1036, 1439, 1547 & V-797-7-2, grad., str., flex. base and 1-course surf. treat.; Cooper & Woodruff, Dallas, \$175,231.

Wharton—Proj. V-837-2-1, Hwy. FM 441, grad., str., flex. base and 1-course surf. treat.; The Jarbet Co., San Antonio, \$104,027.

Navarro—Proj. R-999-1-3, Hwy. FM 1394, grad., str., soil asph. base and surf.; E. W. Hable & Sons, Corsicana, \$76,513.

Harris—Proj. U-102-4-1, Hwy. SH 225, grad. storm sewers, flex. base asph. surf. conc. pavt., bridges, traf. contr. sig., etc.; Gulf Bitulithic, Texas Bitulithic, & F. M. Reeves Aust., \$2,563.

Kaufman—Proj. S-919(5), Hwy. SH 243, grad., sects., bridges, flex. base and 2-course surf. treat.; Southwest General Construction Co., Dallas, \$28,628.

Harris—Proj. FI-466(21), Hwy. U.S. 75, grad., str., and conc. pavt.; Holland Page, Austin, \$331,663.

Burnet—Proj. R-1198-2-1, Hwy. FM 1321, grad., str., found. course and 2-course surf. treat.; D. H. Buchanan Construction Co., Temple, \$34,543.

Lipscomb—Proj. V-1339-1-1, V-1340-1-1 & C-355-1-14, Hwy. FM 1454-1455 & SH 117, grad., str., ind. course and 1 & 2 course surf. treat.; Bell, Braden, Barker & Gilvin, Amarillo, \$124,239.

Van Zandt—Proj. V-1322-2-1, Hwy. 1255, grad., str., soil asph. base and 1-course surf. treat.; E. W. Hable & Sons, Corsicana, \$136,639.

Lubbock & Crosby—Proj. V-644-1-4, etc.; Hwy. FM 40, 1309, 1308, 378 & 1525, grad., str., ind. course and 2-course surf. treat.; J. R. Fanning, Lubbock, \$139,883.

Rieberg—Proj. C-102-6-1, Hwy. SH 285, grad., flex. base and 2-course surf. treat.; Heidenfels Brothers, Rockport, \$81,233.

McLennan—Proj. U-151-1-14, Hwy. U.S. 81, widening & resurf. with hot mix A.C.P.; Public Construction Co., Denton, \$214,713.

AUSTIN—State Highway Commission let contracts for projects in following counties:

Floyd and Briscoe—Cont. No. RV-651-1-3 & V-971-1-2, Hwy. FM 28 & 599, 11,241 mi. grad., str., flex. base & 2-course surf. treat.; F. N. Lumber, Albuquerque, N. M., \$85,720.

Wharton—Cont. R-1261-2-1, Hwy. FM 1295, 6,795 mi. grad., str., flex. base and 1-course surf. treat.; Jarbet Co., Inc., San Antonio, \$114,502.

Harrison, Marion and Uppshur—Cont. R-1382-3-1, R-1382-2-1 & R-1382-1-1, Hwy. FM 450, 7,464 mi. grad., str., flex. base and 1-course surf. treat.; C. R. Heideberg, Jacksonville, Tex., \$90,069.

Hemphill—Cont. R-798-3-1, Hwy. FM 1263, 5,766 mi. grad., drain., str., flex. base and

(Continued on page 32)

Unit Prices—Louisiana Concrete Pavement

State Project No. 3-30-7, 1.513 miles of grading, small drainage structures, soil cement base course, bituminous surface treatment (asphalt cement) and Portland cement concrete pavement, on east approach to Lake Charles bridge in Calcasieu Parish, Louisiana.

Description	Quantity	Flenniken Construction Co.		W. R. Aldrich & Co.	
		Unit	Amount	Unit	Amount
Common Excavation	127,412 Cu. Yds.	\$ 30	\$114,670.80	\$ 30	\$114,670.80
Drainage Excavation	353.0 Cu. Yds.	1.50	1,279.50	1.00	853.20
Muck Excavation	10,999 Cu. Yds.	3.00	32,997.00	1.00	10,999.00
Overhaul On Excavation	1,958,000 Sta. Yds.	.02	39,160.00	.01	19,580.00
Mud Sodding	14,700 Cu. Yds.	4.00	58,800.00	2.00	29,400.00
Grav. Base Course	437 Cu. Yds.	8.00	2,622.00		
Soil Cem. Base Crs.	24,419.2 Sq. Yds.	1.45	35,407.84	90	21,977.28
Shell Base Course	606 Cu. Yds.			4.00	2,424.00
Port. Cem. Conc. Pvt., Type B	42,334.7 Sq. Yds.	5.20	220,140.44	4.90	207,403.00
Port. Cem. Conc. Pvt. Type B	4,442.9 Sq. Yds.	6.00	26,657.40	5.00	22,214.50
Poured Filler (Asphalt Mineral)	10.5 Tons	150.00	1,575.00	120.00	1,260.00
Tie Bar Assembly	15,885 Lin. Ft.	.30	4,765.50	.15	2,382.75
Black Magnetic Iron Traffic Stripes	158.85 Sta.	6.00	953.10	10.00	1,588.50
Star. L.D. Trans. Assm. (D&C Joints)	13,100 Lin. Ft.	.60	7,860.00	.80	10,480.00
Star. L.D. Trans. Assm.	1,000 Lin. Ft.	.60	600.00	.80	800.00
Bit. Mix. For Cold Appl.	236 Tons	15.00	3,540.00	15.00	3,540.00
Bituminous Tack Coat	471 Gals.	.30	141.30	.25	117.75
Bituminous Primer, Grade P-1	28 Lin. Ft.	1.75	49.00	3.00	84.00
Asphalt Cement	20,051 Gals.	.20	4,010.20	.20	4,010.20
Coarse Agg. (Size 1, Uncrushed)	446 Cu. Yds.	7.00	3,122.00	7.50	3,345.00
Fine Agg. (Size 2, Uncrushed)	247 Cu. Yds.	7.00	1,729.00	7.50	1,852.50
Seal Coat Agg. (Size 3, Uncrushed)	167 Cu. Yds.	7.00	1,169.00	7.50	1,252.50
Class "A" Concrete	47.69 Cu. Yds.	80.00	3,815.20	90.00	4,292.10
Deformed Reinforcing Steel	9,425 Lbs.	.20	1,885.00	.15	1,413.75
Fabricated Carbon Steel	6,025 Lbs.	.70	4,217.50	.35	2,108.75
12-in. Rein. Conc. Culv. Pipe	120 Lin. Ft.	3.00	360.00	3.00	360.00
24-in. Rein. Conc. Culv. Pipe	600 Lin. Ft.	5.00	3,000.00	6.00	3,744.00
Fert. Broadcast (Comm. Fert.)	21,854 Lbs.	.08	1,748.32	.07	1,529.78
Seeding	820 Lbs.	2.00	1,640.00	1.50	1,230.00
Right-of-Way Markers (Conc. Posts)	28 Markers	6.00	168.00	5.00	140.00
Conc. Cast-in-Place Revets, Type A	377.15 Sq. Yds.	2.00	754.30	2.00	754.30
Integral Conc. Curb	4,225.3 Lin. Ft.	2.00	8,450.60	1.00	4,225.30
Integral Conc. Curb	272.7 Lin. Ft.	2.00	545.40	1.75	477.23
Removing Old Pavement	326.4 Sq. Yds.	2.00	652.80	2.00	652.80
Removing Old Walk	24.0 Sq. Yds.	2.00	48.00	1.00	24.00
Remov. Old Comb. Curb & Gutter	121.8 Lin. Ft.	1.00	121.80	1.50	182.70
Asphaltic Marker Strip	200.92 Lin. Ft.	2.00	401.84	2.00	401.84
Concrete Posts	2,192 Posts	6.00	13,152.00	3.00	6,576.00
Rein. Conc. R.R. Grade Crossing	1.00 Sq. Ft.	2.00	2.00	7.00	7.00
Concrete Approach Slab	122.96 Sq. Yds.	8.00	983.68	7.00	860.72
Cast-Iron Frames	2 Each	60.00	120.00	100.00	200.00
Cast-Iron Grates	2 Each	120.00	240.00	100.00	200.00
Remov. & Reloc. of Bldgs. & Misc. Str.	Lump Sum		20.00		1,000.00
Total Amount of Contractor's Bid Including Lowest Bid Submitted On Each Item On Which Alternate Bids Are Requested			\$611,668.67		\$499,208.59
Total Highest Alternate for Figuring Amount of Certified Check			\$611,668.67		\$499,208.59

Unit Prices—Louisiana Concrete Pavement

State Project No. 8-03-13, 2.079 miles of grading and Portland cement concrete pavement on Krotz Springs-Lottie Highway in Pointe Coupee Parish, Louisiana.

Description	Quantity	Forcum James Co.		T. L. James & Co., Inc.	
		Unit	Amount	Unit	Amount
Common Excavation	10,000 Cu. Yds.	\$ 40	\$4,000.00	\$ 35	\$3,500.00
Special Borrow Excavation	1,000 Cu. Yds.	.75	750.00	1.25	1,250.00
Grav. Surf. Crs. (Grade A Modified)	120 Cu. Yds.	5.00	600.00	5.00	600.00
Port. Cem. Conc. Pvt., Type B	46,672.9 Sq. Yds.	3.66	170,822.81	3.63	169,422.62
Port. Cem. Conc. Pvt., Type D	46,672.9 Sq. Yds.	4.50	210,919.50	4.26	198,818.62
Port. Cem. Conc. Pvt., Type B	4,887.5 Sq. Yds.			4.26	20,818.62
Port. Cem. Conc. Pvt., Type D	4,887.5 Sq. Yds.				
Port. Cem. Conc. Pvt., Type E	4,887.5 Sq. Yds.				
Port. Cem. Conc. Pvt., Type B	1,840.8 Sq. Yds.	4.00	7,363.20	3.85	6,995.04
Port. Cem. Conc. Pvt., Type D	1,840.8 Sq. Yds.			3.85	6,995.04
Port. Cem. Conc. Pvt., Type E	1,840.8 Sq. Yds.				
Poured Filler—Asphalt Mineral	13 Tons	100.00	1,300.00	90.00	1,170.00
Tie Bar Assembly	22,150 Lin. Ft.	.20	4,430.00	15.00	3,327.00
Black Magnetic Iron Traffic Stripes	218.0 Sta.	6.00	1,308.00	5.00	1,090.00
Star. L.D. Trans. Assm. (D&C Joints)	15,100 Lin. Ft.	.70	10,570.00		
Star. L.D. Trans. Assm. (Exp. Joints)	1,160 Lin. Ft.	.90	1,044.00		
Dowel Assm. (Dummy & Conc. Joints)	45,100 Lin. Ft.			.50	7,550.00
Dowel Assm. (Expansion Joints)	1,160 Lin. Ft.			.70	812.00
Class "A" Concrete	25.13 Cu. Yds.	75.00	1,884.75	50.00	1,256.50
Deformed Reinforcing Steel	17,143 Lbs.	.15	2,571.45	.12	2,057.16
Bar Rein. (Concrete Pavement)	296.97 Lbs.			10	296.97
Fabric Reinforcement	191,553 Lbs.	.12	22,986.36	.09	17,239.77
Fabricated Carbon Steel	14,155 Lbs.	.50	7,077.50	.40	5,662.00
Integral Concrete Lin. Curb.	19,217.42 Lin. Ft.	.35	6,726.09	.35	6,726.09
White Reflecting Integral Curb	1,008.64 Lin. Ft.	1.00	1,008.64	.75	756.48
Removing Old Pavement	2,715.56 Sq. Yds.	.75	2,036.67	1.00	2,715.56
2-6" Dividing Curb	60 Lin. Ft.	7.50	450.00	10.00	600.00
White Concrete Reflecting Neutral Zone	352.3 Lin. Ft.	6.00	2,113.80	3.00	907.50
Concrete Approach Slab	475.53 Sq. Yds.	7.50	3,566.48	6.00	2,853.18
Split Slab Construction	1,052.0 Sq. Yds.	.50	526.00	.50	526.00
Total Amount of Contractor's Bid Including Lowest Bid Submitted On Each Item On Which Alternate Bids Are Requested			\$273,384.44		\$256,690.52
Total Highest Alternate for Figuring Amount of Certified Check			\$273,384.44		\$269,131.45

Southern Construction Projects

TEXAS

(Continued from page 31)

1-course surf. treat.; Cooper & Woodruff, Dallas, \$73,850.

Montgomery—Cont. R-1062-3-1, Hwy. 1485, 9.066 mi. grad., str., flex. base and 1-course surf. treat.; Thomas & Ratliff, Rogers, \$112,400.

Camp and Upshur—Cont. No. V-1019-2-2 & R-1019-3-1, Hwy. FM 557, 11.610 mi. grad., str., flex. base and 1-course surf. treat.; L. W. Felphrey Co., Gladewater, \$156,224.

Andrews—Cont. R-961-2-2, RV-961-2-1 & RV-961-3-1, Hwy. FM 181 & 1303, 19.837 mi. grad., str., flex. base & asph. surf. treat.; J. R. Fanning, Lubbock, \$261,802.

Kennedy—Cont. 327-5-7, Fed. Proj. F-913 (8), Hwy. U. S. 77, 12.987 mi. reconstr. and widen part.; South Texas Construction Co., Corpus Christi, \$393,594.

Dallas—Cont. 47-7-20, Fed. Proj. U-515(10), Hwy. U. S. 75, arch storm sewer in open cut; Texas Bitulithic Co., Dallas, \$140,822.

Wichita—Cont. 137-3-15, Fed. Proj. S-1163 (2), Hwy. SH 25, 11.486 mi. grad. revisions, flex. base & 2-course surf. treat.; J. W. Perry, San Antonio, \$97,945.

Scurry—Cont. 1361-3-2 & 53-8-15, Fed. Proj. S-884(2), Hwy. 1222 & U. S. 84, Detour, 9.672 mi. grad., str., flex. base & 1-course surf. treat.; J. R. Canlon Construction Co., Austin & Rex D. Kitchens Construction Co., Austin, \$167,220.

Fort Bend—Cont. R-188-10-1, Hwy. FM 1463, 7.361 mi. grad., str., soil asph. base and 1-course surf. treat.; Brown & Root, Inc., Houston, \$112,217.

Collin—Cont. C-47-6-20, Hwy. U. S. 75, 10.765 mi. grad., ext. str., flex. base shoulders, widening part. & hot mix asph. conc. part.; Uvalde Construction Co., Dallas, \$368,901.

Brasoria—Cont. C-179-2-24 & C-188-7-2, Hwy. SH 35 & Spur 59, 1.687 mi. grad., str., conc. base, flex. base shoulders & asph. part.; Harrison Engineering & Construction Corp., Texas City, \$105,603.

Erath—Cont. R-1332-1-2 & R-1331-1-2, Hwy. FM 1188 & 1189, 11.523 mi. grad., drain.

strs., found. course, prime & 1-course surf. treat.; J. W. Perry, San Antonio, \$108,335.

Dallas—Cont. 47-7-23 & 26, Fed. Proj. UG-515(9) & U. S. 75, 0.411 mi. grad., str., storm sewers and conc. part.; Austin Bridge Co., Dallas and Austin Road Co., Dallas, \$533,596.

Cass—Cont. R-812-4-1, Hwy. FM 251, 11.019 mi. grad., str., flex. base & 1-course surf. treat.; H. R. Henderson & Co., Marshall, \$147,585.

Coryell—Cont. R-1219-2-1, Hwy. 182, 6.945 mi. grad., str., found. course, prime coat & 1-course surf. treat.; Dean Word Co., New Braunfels, \$81,792.

Bowie—Cont. R-945-1-1, Hwy. FM 1397, 3.265 mi. grad., str., flex. base and 1-course surf. treat.; Cage Brothers, San Antonio, \$101,991.

Ward—Cont. R-1370-1-1, Hwy. FM 1219, 6.236 mi. grad., str., base, 1-course surf. treat. and seal coat; Hugh McMillan, El Paso, \$65,286.

Galveston—Cont. V-978-1-1, Hwy. FM 517, 7.127 mi. grad., str., flex. base and 2-course surf. treat.; Austin Road Co., Dallas, \$253,538.

Newton—Cont. R-627-4-1, Hwy. FM 1416, 4.388 mi. grad., str., flex. base & 1-course surf. treat.; Menefee Brothers & Alford, Center, \$72,192.

Bell—Cont. R-652-3-1, Hwy. FM 1178, 6.829 mi. grad., str., found. course & 1-course surf. treat.; Thomas & Ratliff, Rogers, \$367,000.

Dallas—Cont. R-1047-3-2, Hwy. FM 1382, 4.176 mi. grad., drain., str., found. course & 1-course surf. treat.; Spencer Construction Co., Carrollton, \$105,391.

Taylor and Callahan—Cont. 6-6-22, 6-7-19 & 20 & 6-9-1, Fed. Proj. F-468(7), F1-52(15) & F-52(16), Hwy. U. S. 80 & Spur 189, 18.264 mi. grad., str., flex. base & single asph. surf. treat.; Ernest Loyd, Ft. Worth, \$660,861.

Crane—Cont. 229-2-10, Fed. Proj. S-649(3), Hwy. SH 51, 11.790 mi. grad., str., flex. base & 2-course surf. treat.; Bryan & Hoffman, Plainview, \$154,529.

Travis—Cont. No. 15-13-2, Fed. Proj. F1-200(6), Hwy. U. S. 81, 0.038 mi., Str. Hwy.

29 overpass, F-384, St. E. 32nd St. Manor Rd. and E. 19th St., underpass in City of Austin; Pace-Spence Co., Mansfield, \$270,709.

Floyd—Cont. R-740-2-2, Hwy. FM 1065, 0.208 mi., Los Linquish and Quitova Creek bridges; Bell, Braden, Barker & Gilvin, Inc., Amarillo, \$83,151.

Palo Pinto—Cont. 314-6-8, Fed. Proj. S-288(5), Hwy. FM 4, 0.406 mi. grad., drain., str., found. course, prime coat and 2-course surf. treat.; John F. Buckner & Sons, Cleburne, \$30,354.

AUSTIN—State Public Safety Commission let contract to Leslie F. Crockett Construction Co., \$562,000 for administration building, Dallas & Fort Worth Highway.

BROWNFIELD—Brownfield Independent School District plans building program, \$300,000.

BROWNSVILLE—City approved \$1,150,000 bond issue for new sewer plants and sewage lines.

BROWNSVILLE—City plans \$250,000 repairs to existing streets and storm sewers and \$600,000 for city's one-third share of general street paving program.

BROWNSVILLE—City plans \$1,100,000 water plant expansion and water system improvements.

BROWNSVILLE—City plans \$800,000 civic center, including public auditorium, public library and swimming pool.

BROWNSVILLE—Housing Authority received low bid from Marjant Bros., Mercedes, \$1,084,492, for 122 dwelling unit housing project, Tex. 7-5.

BROWNWOOD—Housing Authority received low bid from Paschall-Sanders Construction Co., Fort Worth, \$486,654, for 50 unit housing project, Tex. 2102.

LAKECASTLE—Panola County plans Courthouse, \$500,000.

CORPUS CHRISTI—Contract was let to Linbeck Construction Co., Houston, \$2,877,400 for Driscoll Foundation Children's Hospital, Alameda.

CORPUS CHRISTI—Nueces County Navi-

(Continued on page 34)

Unit Prices—Missouri Grading, Highway Surfacing

Project No. S-1066(11), Sec. A and B, graded earth, culverts and chat, gravel or crushed stone surfacing on Route SH in Iron County, Missouri.

Description	Quantity	Porter DeWitt Construction Co.		Kirkwood Construction Co.		W. J. Menefee Construction Co.		O'Dell & Riney Construction Co.	
		Unit	Amount	Unit	Amount	Unit	Amount	Unit	Amount
Clearing	6.2 Acres		\$ 868.00		\$125.00		\$ 775.00		\$200.00
Grubbing	6.2 Acres		140.00		868.00		50.00		310.00
Class "A" Excavation	839 Cu. Yds.		.33		276.87		.38		318.82
Class "C" Excavation	210 Cu. Yds.		2.00		420.00		2.00		420.00
Igneous Rock Excavation	50 Cu. Yds.		2.00		100.00		8.00		400.00
Class 3 Excav. for Struct.	378 Cu. Yds.		3.00		1,134.00		3.00		1,134.00
Machine Grading (Class 1)	131.2 Sta.		25.00		3,280.00		24.00		3,148.80
Machine Grading (Class 2)	55.3 Sta.		35.00		1,935.50		34.00		1,880.20
Subgrade Scarifying	5.0 Sta.		15.00		75.00		10.00		50.00
Chat, Grav. (B) or Cr. Stone Surf.	2,277 Cu. Yds.		2.00		4,554.00		1.60		3,643.20
12" Culvert Pipe	140 Lin. Ft.		2.50		350.00		2.25		315.00
15" Culvert Pipe	288 Lin. Ft.		3.00		774.00		2.70		696.60
18" Culvert Pipe	316 Lin. Ft.		3.60		1,137.60		3.00		948.00
24" Culvert Pipe	346 Lin. Ft.		5.50		1,903.00		4.50		1,557.00
36" Culvert Pipe	36 Lin. Ft.		10.50		378.00		10.00		360.00
Met. Arch. Culv. (Type B-7)	38 Lin. Ft.		15.00		570.00		14.00		532.00
Met. Arch. Culv. (Type B-8)	154 Lin. Ft.		18.00		2,772.00		16.00		2,464.00
Total for Project			\$21,395.97		\$18,952.62		\$20,787.61		\$22,570.29

SECTION B, LENGTH: 4.413 MILES

Clearing	9.0 Acres	\$140.00	\$1,260.00	\$125.00	\$1,125.00	\$200.00	\$1,800.00	\$215.00	\$1,935.00
Grubbing	8.6 Acres	140.00	1,204.00	50.00	430.00	50.00	430.00	100.00	860.00
Class "A" Excavation	5,386 Cu. Yds.	.33	1,786.88	.38	2,050.48	.44	2,374.24	.41	2,212.36
Igneous Rock Excavation	1,910 Cu. Yds.	2.00	3,820.00	5.65	10,781.50	5.50	10,595.00	4.75	9,072.50
Class 3 Excav. for Struct.	210 Cu. Yds.	3.00	630.00	3.00	630.00	3.00	630.00	4.00	840.00
Machine Grading (Class 1)	158.2 Sta.	25.00	3,955.00	24.00	3,796.80	30.00	4,746.00	30.00	4,746.00
Machine Grading (Class 2)	52.3 Sta.	35.00	1,830.50	34.00	1,778.20	45.00	2,353.50	44.00	2,301.20
Subgrade Scarifying	11.0 Sta.	15.00	165.00	10.00	110.00	10.00	110.00	10.00	110.00
Furnishing Rock Fill	264 Cu. Yds.	1.00	264.00	3.50	924.00	3.50	924.00	5.00	1,320.00
Placing Rock Fill	1,138 Cu. Yds.	3.50	3,983.00	3.00	3,414.00	3.00	3,414.00	3.50	3,983.00
Grouted Rock Fill Surf.	1,810 Sq. Yds.	2.00	3,620.00	3.50	6,335.00	2.50	4,525.00	3.00	5,430.00
Chat, Grav. (B) or Cr. Stone Surf.	2,851 Cu. Yds.	2.00	5,702.00	1.60	4,561.60	1.75	4,989.25	2.40	7,412.60
12" Culvert Pipe	200 Lin. Ft.	2.50	500.00	2.25	450.00	2.25	450.00	2.00	500.00
15" Culvert Pipe	234 Lin. Ft.	3.00	702.00	2.70	631.80	2.35	549.90	2.50	585.00
18" Culvert Pipe	392 Lin. Ft.	3.60	1,411.20	3.00	1,176.00	3.00	1,176.00	3.10	1,215.20
24" Culvert Pipe	170 Lin. Ft.	5.50	935.00	4.50	765.00	4.50	765.00	4.60	782.00
36" Culvert Pipe	66 Lin. Ft.	10.50	693.00	10.00	690.00	10.00	690.00	9.00	630.00
Met. Arch. Culv. (Type B-7)	72 Lin. Ft.	15.00	1,080.00	14.00	1,008.00	13.50	970.00	15.00	1,080.00
Met. Arch. Culv. (Type B-8)	114 Lin. Ft.	18.00	2,052.00	16.00	1,824.00	15.00	1,710.00	20.00	2,280.00
Total for Project			\$36,462.78		\$43,257.38		\$43,687.89		\$47,845.86
TOTAL FOR COMBINATION			\$57,858.75		\$62,210.00		\$64,475.50		\$70,416.15

Unit Prices—Missouri Portland Cement Concrete Pavement

Project F-227(3), 2.281 miles of graded earth, culverts, bridges and Portland cement concrete on Route 71 in Platte County.

Description	Quantity	The Maxwell Bridge Co.		R. G. Aldridge		Bushman Construction Co.		Condon-Cunningham Co.	
		Columbus, Kans.	Kansas City, Kans.	St. Joseph, Mo.	Omaha, Nebr.				
Unit Pr.	Amount	Unit Pr.	Amount	Unit Pr.	Amount	Unit Pr.	Amount		
Clearing	22.9 Acres	\$100.00	\$2,290.00	\$200.00	\$4,580.00	\$200.00	\$4,580.00	\$130.00	\$2,977.00
Grubbing	9.4 Acres	125.00	1,175.00	200.00	1,880.00	150.00	1,410.00	360.00	3,366.00
Class A Excavation	226.074 Cu. Yds.	.32	72,343.68	.30	67,822.20	.32	72,343.68	.26	58,779.24
Class C Excavation	10,134 Cu. Yds.	.32	3,242.88	1.40	14,187.60	.90	9,120.60	1.75	17,734.50
Class 3 Excav. for Struct.	570 Cu. Yds.	3.00	1,710.00	3.00	1,710.00	3.50	1,995.00	2.85	1,624.50
Compact, Embank (Rolling)	201,981 Cu. Yds.	.05	10,099.05	.05	10,099.05	.05	10,099.05	.05	13,128.76
Compact, in Cuts (Rolling)	17,926 Cu. Yds.	.05	896.30	.05	896.30	.08	1,434.08	.15	2,688.90
Overhaul	614,525 Sta. Yds.	.0075	4,608.93	.01	6,145.25	.01	6,145.25	.01	6,145.25
Removing Pavement	1,908 Sq. Yds.	.60	1,144.80	.30	572.40	1.00	1,908.00	.80	1,526.40
Remov. Surf. Drain Basins	6 Each	5.00	30.00	70.00	420.00	25.00	150.00	21.00	126.00
Remov. Surf. Drains	64 Lin. Ft.	.75	48.00	.50	32.00	2.00	128.00	2.10	134.40
Water (Compacting-Rolling)	39,583 100 Gals.	.00	0.00	.01	395.83	.001	39.58	.10	3,958.30
Placing Rock Blanket	1,910 Cu. Yds.	1.50	2,865.00	2.00	3,820.00	2.00	3,820.00	1.10	2,101.00
Gravel (A) or Cr. Stone Surf.	196 Cu. Yds.	5.00	980.00	3.00	588.00	5.00	980.00	3.90	764.40
Port. Cem. Concr. Pavement	36,257.6 Sq. Yds.	3.87	140,316.91	4.00	145,030.40	3.90	141,404.64	3.90	141,404.64
Class B Conc. (Box Culv.)	184.3 Cu. Yds.	50.00	9,215.00	50.00	9,215.00	70.00	12,901.00	63.00	11,610.90
Class B Conc.	22.4 Cu. Yds.	80.00	1,792.00	80.00	1,792.00	90.00	2,016.00	100.00	2,240.00
Fab. Struct. Steel	140 Lbs.	.25	35.00	.25	35.00	.50	70.00	.55	77.00
15-in. Culv. Pipe (X-Rd.)	638 Lin. Ft.	3.25	2,073.50	2.80	1,786.40	3.00	1,914.00	2.75	1,754.50
18-in. Culv. Pipe (X-Rd.)	78 Lin. Ft.	3.75	292.50	3.30	257.40	3.50	273.00	3.25	253.50
24-in. Culv. Pipe (X-Rd.)	160 Lin. Ft.	5.50	880.00	4.80	768.00	5.00	800.00	5.00	800.00
12-in. Culv. Pipe (E&SR)	20 Lin. Ft.	2.15	43.00	2.30	46.00	3.00	60.00	2.50	50.00
15-in. Culv. Pipe (E&SR)	148 Lin. Ft.	2.75	407.00	2.70	399.60	4.00	592.00	3.50	518.00
18-in. Culv. Pipe (E&SR)	84 Lin. Ft.	3.25	273.00	3.05	256.20	4.00	336.00	3.50	294.00
Reinforcing Steel	25,060 Lbs.	.11	2,756.60	.12	3,007.20	.13	3,257.80	.13	3,257.80
Underdrains	1,410 Lin. Ft.	1.50	2,115.00	2.30	3,243.00	2.50	3,525.00	2.10	2,961.00
Barricades	4 Each	150.00	600.00	100.00	400.00	100.00	400.00	260.00	1,040.00
Relocating Barricades	1 Each	50.00	50.00	50.00	50.00	75.00	75.00	70.00	70.00
Grates and Bearing Plates	540 Lbs.	.60	324.00	.30	162.00	.50	270.00	.55	297.00
Fertilizing and Mulching	20.0 Acres	175.00	3,500.00	200.00	4,000.00	200.00	4,000.00	205.00	4,100.00
6-IN. STABILIZED AGGREGATE BASE (BY-PASSES)									
Water	152 100 Gals.	.50	76.00	.30	45.60	.30	76.00	.30	45.60
Stabilized Aggregate	1,206 Tons	3.05	3,678.30	2.50	3,015.00	2.40	2,894.40	2.95	3,537.70
Spreading, Shap. & Compact	3,653 Sq. Yds.	.30	1,095.90	.40	1,461.20	.35	1,278.55	.55	2,009.15
8-IN. COMPACTED GRANULAR BASE									
Water	1,308 100 Gals.	.50	654.00	.30	392.40	.50	654.00	.50	654.00
Granular Base Material	8,632 Tons	3.05	26,327.60	2.40	20,716.80	2.40	20,716.80	2.40	20,716.80
Spreading, Shap. & Compact	2.85 Miles	1,900.00	5,415.00	1,000.00	2,850.00	2,000.00	5,700.00	2,000.00	5,700.00
Total for Road Work									
BRIDGE AT Station 42+00 (Dwg. No. L-380)			\$303,353.95		\$312,077.83		\$317,367.43		\$318,697.24
Class 1 Excav. for Struct.	510 Cu. Yds.	\$6.00	\$3,060.00	\$6.00	\$3,060.00	\$3.50	\$1,785.00	\$4.00	\$2,040.00
Class B Conc. (Superstruct.)	80.00	18,480.00	62.00	19,096.00	64.00	19,712.00	58.00	17,880.00	
Class B Conc. (Substruct.)	264.8 Cu. Yds.	55.00	14,564.00	62.00	16,417.60	64.00	16,947.20	62.00	16,417.60
Fab. Struct. Steel (I-Bm. Spans)	298,000 Lbs.	.14	41,726.00	.14	41,720.00	.15	44,700.00	.19	56,620.00
Steel Castings	10,440 Lbs.	.75	7,830.00	.60	6,264.00	.60	6,264.00	.60	6,264.00
Gray Iron Alloy Castings	22,040 Lbs.	1.00	22,040.00	.80	17,632.00	.70	15,538.00	.60	13,224.00
Reinforcing Steel	112,420 Lbs.	.11	12,366.20	.12	13,490.40	.12	13,490.40	.14	15,738.80
10-in. Steel Piles in Place	4,040 Lin. Ft.	2.50	10,100.00	3.00	12,120.00	2.50	10,100.00	2.00	8,080.00
Total for Bridge Work at Station 42+00									
BRIDGE AT Station 52+18 (Dwg. No. L-354)			\$109,160.20		\$112,896.00		\$113,726.60		\$123,908.40
Class 1 Excav. for Struct.	1,520 Cu. Yds.	\$6.00	\$9,120.00	\$6.00	\$9,120.00	\$3.50	\$5,320.00	\$5.00	\$7,600.00
Class 2 Excav. for Struct.	1,302 Cu. Yds.	20.00	26,040.00	20.00	26,040.00	30.00	39,060.00	30.00	39,060.00
Class B Conc. (Superstruct.)	539.9 Cu. Yds.	60.00	32,394.00	62.00	33,473.80	64.00	34,553.60	65.00	35,093.50
Class B Conc. (Substruct.)	907.4 Cu. Yds.	55.00	49,907.00	62.00	56,258.80	64.00	58,073.60	56.00	50,814.40
Fab. Struct. Steel	327,400 Lbs.	.145	47,473.00	.15	49,110.00	.15	49,110.00	.20	65,480.00
Fab. Struct. Steel (I-Bm. Sp.)	318,170 Lbs.	.14	44,543.80	.14	44,543.80	.15	47,725.50	.19	60,452.30
Steel Castings	17,640 Lbs.	.75	13,230.00	.60	10,584.00	.60	10,584.00	.60	10,584.00
Reinforcing Steel	214,830 Lbs.	.11	23,631.30	.12	25,779.60	.12	25,779.60	.14	30,076.20
10-in. Steel Piles in Place	1,731 Lin. Ft.	2.50	4,327.50	2.50	4,327.50	2.50	4,327.50	2.00	4,362.00
12-in. Steel Piles in Place	2,362 Lin. Ft.	2.50	5,905.00	3.00	7,086.00	2.75	6,495.50	2.10	4,960.20
Total for Bridge Work at Station 52+18									
TOTAL FOR PROJECT			\$669,085.75		\$691,297.33		\$712,123.33		\$750,364.65

Unit Prices—Missouri Grading, Highway Surfacing

No. S-217(3), 4.090 miles of graded earth, culverts and gravel or crushed stone surfacing on Route SK in Howell County.

Item	Quantity	Gast & Ray Contracting Co. Louisiana, Mo.		Burk Const. Co. Springfield, Mo.		Carte Bros. Const. Co., Inc. West Plains, Mo.		Snodgrass Const. Co. California, Mo.	
		Unit Pr.	Amount	Unit Pr.	Amount	Unit Pr.	Amount	Unit Pr.	Amount
Clearing	12.7 Acres	\$120.00	\$1,524.00	\$60.00	\$762.00	\$160.00	\$2,032.00	\$10.00	\$127.00
Grubbing	9.0 Acres	20.00	180.00	40.00	360.00	20.00	180.00	10.00	90.00
Class "A" Excavation	2,256 Cu. Yds.	.35	789.60	.40	902.40	.35	789.60	.50	1,128.00
Class "C" Excavation	943 Cu. Yds.	2.00	1,886.00	1.50	1,414.50	1.50	1,414.50	3.00	2,829.00
Class "S" Excav. for Struct.	371 Cu. Yds.	2.50	927.50	2.00	742.00	2.00	742.00	3.00	1,116.00
Machine Grad. (Class 1)	185.5 Sta.	20.00	3,710.00	25.00	4,637.50	25.00	4,637.50	33.20	6,158.60
Machine Grad. (Class 2)	29.2 Sta.	30.00	876.00	40.00	1,168.00	35.00	1,022.00	122.50	3,577.00
Subgrade Scarifying	195.0 Sta.	5.00	975.00	4.00	780.00	5.00	975.00	1.00	195.00
Placing Rock Fill	22,040 Lbs.	10.00	220.40	8.00	176.32	9.00	198.36	5.00	1,100.00
Fully Grouted Rock Fill	61 Cu. Yds.	7.00	427.00	15.00	915.00	10.00	610.00	6.00	366.00
Grouted Rock Fill Surface	1,195 Sq. Yds.	2.50	2,987.50	2.00	2,390.00	2.90	3,465.50	5.00	5,975.00
Placing Rock Blanket	363 Cu. Yds.	3.00	1,089.00	5.00	1,815.00	4.50	1,633.50	5.00	1,815.00
Grav. (B) or Cr. Stone Surf.	2,081 Cu. Yds.	1.50	3,121.50	2.00	4,162.00	1.45	3,017.45	2.00	4,162.00
24" Corr. Metal Culvert Pipe	64 Lin. Ft.	4.35	278.40	4.50	288.00	5.50	352.00	5.00	320.00
30" Corr. Metal Culvert Pipe	120 Lin. Ft.	5.60	672.00	6.00	720.00	6.50	780.00	6.00	720.00
48" Corr. Metal Culvert Pipe	64 Lin. Ft.	11.00	704.00	12.00	768.00	12.00	768.00	12.50	800.00
12" Corr. Metal Culvert Pipe	294 Lin. Ft.	2.00	588.00	2.00	588.00	2.00	588.00	1.50	441.00
15" Corr. Metal Culvert Pipe	466 Lin. Ft.	2.65	1,234.90	2.80	1,304.80	2.60	1,211.60	2.25	1,048.50
18" Corr. Metal Culvert Pipe	406 Lin. Ft.	3.00	1,218.00	3.20	1,299.20	2.90	1,177.40	2.85	1,075.90
24" Corr. Metal Culvert Pipe	28 Lin. Ft.	4.35	121.80	4.50	126.00	4.35	121.80	4.45	124.60
30" Corr. Metal Culvert Pipe	62 Lin. Ft.	5.60	347.20	6.00	372.00	5.15	319.30	5.00	350.00
36" Corr. Metal Culvert Pipe	40 Lin. Ft.	8.00	320.00	10.00	400.00	8.00	320.00	8.95	358.00
Metal Arch Culv. (Type B-4)	128 Lin. Ft.	5.50	704.00	6.00	768.00	5.50	704.00	5.75	736.00
Metal Arch Culv. (Type B-9)	40 Lin. Ft.	22.00	880.00	22.00	880.00	20.00	800.00	22.00	880.00
Retard Pipe Culverts	90 Lin. Ft.	2.00	180.00	2.00	180.00	2.00	180.00	2.00	180.00
Total									
			\$25,835.70		\$26,477.80		\$27,318.40		\$34,647.80

Southern Construction Projects

\$12,000,000 Port Project Planned at Baltimore

The Western Maryland Railway, one of the three trunk line carriers serving the Port of Baltimore, announced an extensive improvement program for its Port Covington facilities. The project calls for the expenditure of \$12,000,000 and is probably the biggest single port construction to be undertaken here in recent years. The improvements will include the construction of one new completely modern pier and the renovation and modernization of all other docks and facilities under Western Maryland ownership.

Details of the program are not available pending completion of arrangements with the City of Baltimore and the Port Development Commission on financing and the obtaining of land in the area, it is expected that the improvements will result in a marine terminal for Western Maryland second to none in the country.

Eugene S. Williams, president of the board, said that the new pier will be designed to handle cargo between ships, freight cars and motor trucks and will be located near the present McComas Street piers. "The trucking interests serving the Port have been urging the construction of additional facilities to enable the expeditious handling of cargo between trucks and ships, and the Western Maryland's new pier will be designed to fulfill this need," Mr. Williams said.

"While the trucks are, in part, a competitor of the railroads, their service is essential and should be supplementary to the larger service rendered the Port by the railroads, and therefore proper facilities serving the needs of both should be provided on a proper cost basis.

"Although the Western Maryland's existing piers furnish desirable facilities for such service and are highly regarded by trucking interests, they do not have adequate capacity for the growing volume of shipping through this Port."

Other improvements under the program will include still further expansion of ore handling facilities, the capacity of which was doubled during the current year. Additional trackage to serve the expanded facility is also included in the program.

Western Maryland's new program is the first to be announced since the completion of the port survey by the Knapen Tippetts Abbott firm and will meet one of the shortcomings found by the engineers—the need for additional facilities for handling waterborne freight.

The Western Maryland announcement climaxes one of the busiest port construction years in the city's history. Prior to this new Port Covington program, the Bureau estimated that approximately \$10,000,000 was being expended on marine facilities by railroads serving the Port. Still further improvements by other carriers have been reported, but definite announcement has not yet been made.

TEXAS

(Continued from page 32)

gation District plans two-million bushel grain elevator, \$3,250,000.

CORPUS CHRISTI—City let contract to Heldenfels Brothers, \$528,000 for sewage treatment plant facilities.

CORPUS CHRISTI—Nueces County Water Control & Improvement District No. 2 let contract to Heldenfels Brothers on water distribution system, \$621,452; Chicago Bridge & Iron Co., Houston, storage tanks, \$54,080.

CORPUS CHRISTI—Sisters of Charity of the Incarnate Word received low bid from Gilbert Falbo Co., San Antonio, \$1,000,928 for five-story addition, new boiler house, and alterations and additions to Spohn Hospital and laundry, Proj. No. Tex. 30.

CORPUS CHRISTI—City plans auditorium, Shoreline Blvd., \$1,400,000.

DALLAS—Gibraltar Insurance Co., of America let contract to J. W. Bateson Co., Inc. for 11 story building, \$2,608,800.

DALLAS—Simmons Co. plans factory, \$1,500,000.

DALLAS—Dallas Power and Light Co. plans garage and maintenance building, \$350,000.

DALLAS—Ford Motor Co., Dearborn, Mich., plans service parts depot in Trinity Industrial District, \$1,000,000.

DENISON—Conway Oil Co., Dallas, let contract to Cowdin Brothers, Dallas, negotiated, for two-story vegetable oil refinery, \$1,000,000.

DENTON—North Texas State College let contract to Nathan Wohlfeld, Dallas, \$1,670,123 for two dormitories and cafeteria building.

DUBLIN—Housing Authority received low bid from Texas Housing Co., Dallas, \$349,675, for 50 unit low rent housing project, Tex. 47-1.

DUMAS—Dumas Independent School District let contract to Ramey Construction Co., Amarillo, \$351,490 for grade school.

EAST BERNARD—Wharton County Water Control & Improvement District No. 2, Wharton, let contracts for water and sewer systems as follows: A. S. Koehler, Houston, Contracts 1, 2 & 4, \$121,131 and Pittsburgh-Des Moines Steel Co., Dallas, Contract 3, \$17,700; Layne-Texas Co., Houston, Contract No. 5, \$22,658.

EL PASO—First Christian Church Congregation let contract to Robert E. McKee General Contractor, Inc., El Paso, \$287,700, for church building.

EL PASO—El Paso Independent School District let contract to J. E. Morgan & Sons, \$310,868 for Burleson Elementary School.

FORT WORTH—City let contract to Thomas S. Byren, Inc., \$2,819,250 for Amos G. Carter Terminal Building.

FORT WORTH—Tarrant County plans remodeling courthouse and criminal court building, \$500,000.

FORT WORTH—Castleberry School District plans Junior high school, \$400,000.

GALVESTON—City and Corps of Engineers plan extension of present seawall to conform to present structure, \$2,870,000.

GARLAND—Garland Independent School District let contract to Sachs and Stevens, Dallas, \$357,300 for W. C. Daugherty Elementary School and addition to Junior high school.

GARLAND—City plans \$375,000 sewer extensions.

HEARNE—Housing Authority plans 60 unit housing project, \$503,100.

HOUSTON—Reynolds Metal Co., Louisville, Ky., plans aluminum plant, \$75,000,000.

HOUSTON—Central Freight Lines, Inc. plans new plant, \$350,000.

HOUSTON—University of Texas, Board of Regents, Austin, plans school of public health building, \$1,500,000.

HOUSTON—Mrs. Sallie Shepherd Perkins, Richmond, Va., has given \$350,000 to Rice Institute for establishment of school for music.

HOUSTON—City plans water treatment plant in connection with San Jacinto River project, \$1,000,000.

HOUSTON—Central Freight Lines, Inc., Waco, plans freight terminal building, \$350,000.

HOUSTON—Texas State University of Negroes let contract to Farnsworth and Chambers Construction Co., \$400,000 for science building.

KILGORE—City received low bid from Bryan & Associates, Houston, \$538,858 for sewer mains and sewage treatment plant.

LAMESA—Lamesa Consolidated School District plans \$750,000 elementary school.

LUBBOCK—City received low bid from Bell, Braden & Gilvin, Amarillo, \$366,193 for

storm sewer improvements.

LUBBOCK—First Methodist Church Congregation plans church building, \$750,000.

LUBBOCK—Texas Technological College plans student union building, \$500,000.

McKINNEY—Housing Authority plans 100 unit housing project, \$813,600.

MIDLAND—Midland County Commissioners plan storm sewer, \$400,000.

MIDLAND—Midland Independent School District let contract to Houston Hill at combination bid of \$327,400 for De Zavala and Sam Houston Elementary Schools.

NEEDLERLAND—Nederland Independent School District let contract to Schneider Construction Co., Houston, \$875,644 for senior high school.

PAMPA—Pampa Independent School District let contract to James T. Taylor & Son, Inc., Fort Worth, \$356,982 for field house and vocational building.

PHARR—City plans \$350,000 water and sewer improvements.

PHILLIPS—Phillips Independent School District let contract to Lippert Brothers, Oklahoma City, Okla., \$921,000 for new high school and addition to elementary school.

PORT ARTHUR—City received low bid from O. W. Collins, \$660,340 for water treatment plant, Contract No. 411-7A-PA-4190.

RICHMOND—Fort Bend County plans improvements to County Courthouse, \$450,000.

SAN ANGELO—San Angelo Independent School District plans school building program, \$1,500,000.

SAN ANGELO—City let contract to Russ Mitchell, Inc., Houston, \$667,800 for waterworks improvements.

SAN ANTONIO—Travis Soledad Co. plans four-story and basement parking station, W. Travis St., \$300,000.

SAN ANTONIO—St. Mary's University received low bid from H. H. Moeller, \$304,191 for science building, Cincinnati Ave.

SWEETWATER—City let contract to H. B. Zachry Co., San Antonio, \$641,153 for water supply line and appurtenances.

TAYLOR—Housing Authority plans 70 unit housing project, \$500,000.

TEMPLE—First National Bank received low bid from Robert E. McKee, Dallas, \$1,221,000, for bank building.

TEXARKANA—Texarkana Independent School District plans school expansion program, \$600,000.

TEXAS CITY—Carbide & Carbon Chemicals Division, Union Carbide & Carbon Corp., plans expansion program, \$750,000.

VELASCO—Public Buildings Service, General Services Administration, let contract to Austin Co., Houston, \$3,075,000, for placing in operating condition Government-owned portion of magnesium production facility.

VERNON—Vernon Independent School District let contract to J. L. Hair Construction Co., Wichita Falls, \$333,545 for Shive Elementary School, gymnasium and alterations and additions to Parker School and Booker T. Washington School.

VERNON—Board for Texas State Hospitals and Special Schools, Austin, plans employees quarters and repairs and remodeling of present buildings, Vernon Branch, Wichita Falls State Hospital, \$350,000.

VICTORIA—Victoria Independent School District plans school building program, \$500,000.

WACO—McLennan County plans five-story courthouse annex and jail, \$650,000.

WAXAHACHIE—Waxahachie Independent School District plans additions and alterations to school building, \$450,000.

WAXAHACHIE—Housing Authority received low bid from McCann Construction Co., \$464,454, for 60 unit housing project.

WICHITA FALLS—Housing Authority of City of Wichita Falls received low bid from Texas Housing Co., Dallas, \$1,266,250, for housing project.

VIRGINIA

VIRGINIA—Bureau of Public Roads, Washington, D. C., announced state will receive \$3,357,702 on Federal-Aid highway systems, \$2,644,389 on Secondary and \$1,269,389 on Urban.

VIRGINIA—Chesapeake and Potomac Telephone Co. of Virginia has been authorized by State Corporation Commission to borrow an additional \$10,000,000 from American Telephone & Telegraph Co. next year for construction, completions or extensions of its utility plant.

ARLINGTON—Arlington County Republican Committee announced it will petition for special election to authorize the borrowing of \$3,515,000 for new county school construction.

(Continued on page 36)

Institute Named by Building Code Group

The Southern Building Code Congress has designated Southwest Research Institute, a nonprofit scientific organization, as the Congress' technological research facility, it is announced by Dr. Harold Vagtborg, Institute president.

Dr. Vagtborg, who made the announcement simultaneously with James W. Morgan, president of the Congress in Birmingham, asserted the San Antonio research laboratories, with their divisions of construction technology and fire technology, were "delighted to work with so outstanding and progressive a group as the Southern Building Code Congress and its membership of more than 250 municipalities in 13 states."

As official research facility for the Congress, the Institute will study, analyze and develop data on building materials, equipment, designs and techniques, and report its findings to the Congress. Thereafter, the Congress' Code Research and Revision Committee, which issues certificates of compliance with the Southern Standard Building Code, may base its decisions on the scientifically accurate reports of the Institute.

C. W. Smith, director of the Institute's construction technology division, asserted that, to the best of his knowledge, the agreement marked "the first time a group of municipalities have established continuing relations with a nonprofit, scientific research organization for technological and engineering studies to provide greater economies and efficiency in building construction and at the same time promote better standards of safety and health."

"The Institute is proud of this affiliation with the Congress which has so successfully promulgated a modern code of specifications based on performance. We hope our laboratories will be helpful to the municipalities which constitute the Congress and to the general public which will benefit from new products, new techniques and new combinations of building materials."

Mr. Morgan, on behalf of the Board of Trustees of the Southern Building Code Congress, termed the move, "a great stride forward in the development of modern construction practices."

Southern Building Code Congress is devoted to constant improvement in, and more general adoption of, modern performance building codes which are tailored to meet the standards of safety and health in the South.

Marion Clement, director of the Congress, pointed out that "This regional organization is made up of cities with very similar problems. Codes designed to fit northern climates and snow loads or the earthquakes on the west coast do not meet our needs. The Congress is determined to keep its standard code up to date and to facilitate the general usage of new techniques which will contribute to economy while adequately guarding the health and safety of the public."

Unit Prices—South Carolina Bituminous Surfacing

S.C. Dockets Nos. 19,251, 19,259, 19,264, 19,265 and 19,266, F.A. Project No. 5-350 (1), Roads 36, 34 (Route 430), 82, 83, 86, 105, 66, 107, 108, 109 and 106, grading and bituminous surfacing of 2,523 miles on Road 36 from U.S. Route 25 northerly to Road 62, of 2,049 miles on Road 34 (Route 430) from end of pavement near Road 53 northerly, of 0.841 miles on Roads 82, 83, 86, and 105 being streets in Edgefield, of 0.618 miles on Roads 66, 107, 109 and 106 being streets in Trenton and of 0.477 mile on Road 106 from Road 22 near the south town limits of Edgefield southwesterly, in Edgefield County, South Carolina. Total length of project 6,508 miles.

1. Lamb Construction Co., Inc., Edgefield, S. C.	\$72,781.64
2. Cherokee, Inc., Columbia, S. C.	75,691.23
3. Dickerson, Inc., Monroe, N. C.	78,957.40
4. American Construction Co., Columbia, S. C.	86,713.99
5. Ballenger Paving Co., Greenville, S. C.	87,375.99

Analysis of Low Bid

	Unit Pr.	Amount
Clearing and Grubbing Roadway	Necessary Lump Sum	\$5,400.00
Clearing and Grubbing Pits	4.5 Acres	4.50
Unclassified Excavation	43,672 Cu. Yds.	14,411.76
Overhaul	135,650 Cu. Yds. H.M.	5,426.00
Selected Mat. for Shoulders	3,182 Cu. Yds.	1,531.00
Earth Type Base Cr. (Plt. Mat.)	6,644 Cu. Yds.	2,192.52
Earth Type Base Cr. (Gr. Surf. Mat.)	9,438 Cu. Yds.	4,719.00
Scarifying, Mixing, etc.	83,177 M. Sq. Yds.	415.88
Bit. Surf. (Inv. Fene. Type w/seal)	79,338 Sq. Yds.	27,618.58
Cement Conc. (Class "B") for Steps	1.73 Cu. Yds.	86.50
15" Reinf. Conc. Pipe	1,180 Lin. Ft.	1,652.00
18" Reinf. Conc. Pipe	1,412 Lin. Ft.	2,824.00
24" Reinf. Conc. Pipe	122 Lin. Ft.	350.00
36" Reinf. Conc. Pipe	40 Lin. Ft.	280.00
15" Relaid Pipe	30 Lin. Ft.	42.00
18" Relaid Pipe	15 Lin. Ft.	21.00
24" Relaid Pipe	30 Lin. Ft.	60.00
Cement Rubble Masonry (Gutter)	1,500 Lin. Ft.	3,750.00
Rip Rap	150 Cu. Yds.	750.00
Drop Inlet (24" x 36")	1 Each	100.00
P. A. Markers	2 Each	30.00
P. A. Project No. Plates	2 Each	30.00
New 4/Str. Barbed Wire Fence	2,000 Lin. Ft.	320.00
Reset Fences	5,559 Lin. Ft.	555.90
Moving Item #1—Dkt. 19,259—Rd. 34	Necessary Lump Sum	1.00
Moving Item #1—Dkt. 19,266—Rd. 106	Necessary Lump Sum	100.00
TOTAL		\$72,781.64

Unit Prices—South Carolina Bridge, Approaches

S.C. Dockets Nos. 5,258 and 38,355, F.A. Projects Nos. F-350 (4) & F-2572 (1), bridge, approaches & detour work, the construction of a 150-foot reinforced concrete bridge over Little Salkehatchie River near Denmark, S. C., with .006 mile earth approaches, of a 420-foot reinforced concrete bridge over North Edisto River near North, S. C., with .014 mile earth approaches and also detour road and detour bridge at both sites on U.S. Route 321 in Bamberg-Orangeburg Counties, South Carolina.

1. McMeekin Construction Co., Cheraw, S. C.	\$72,049.47
2. F. A. Triplett, Inc., Chester, S. C.	72,560.26
3. J. C. Edwards, Orangeburg, S. C.	77,019.53
4. Wannamaker & Wells, Inc., Orangeburg, S. C.	78,675.56
5. Robert Lee, Inc., Manning, S. C.	87,461.24
6. Suber & Co., Inc., Whittemire, S. C.	90,032.21
7. Frank W. LaMotte, Columbia, S. C.	91,496.81

Analysis of Low Bid

	Unit Pr.	Amount
Clearing and Grubbing Pits	2 Acres	\$30.00
Common Excavation	9,707 Cu. Yds.	3,688.66
Overhaul	10,314 Cu. Yd. H.M.	515.70
Selected Material for Shoulders	209 Cu. Yds.	146.30
Earth Type Base Cr. (Plt. Mat.)	745 Cu. Yds.	283.10
Scarifying, Mixing, etc.	3,442 M. Sq. Yds.	172.10
Cement Concrete Class "A"	783.90 Cu. Yds.	32,139.90
Reinforcing Steel	173,079 Lbs.	11,711.71
16" Pre-Cast Conc. Pil., Incl. Steel Reinf.	2,100 Lin. Ft.	11,340.00
Steel H Piling (10" @ 42 Lbs.)	528 Lin. Ft.	2,112.00
Pre-Cast Conc. Tilt Slope Drains	180 Lin. Ft.	360.00
Rip Rap	100 Ton	500.00
Relaid Rip Rap	85 Cu. Yds.	340.00
P. A. Markers	2 Each	30.00
P. A. Proj. No. Plates	2 Each	30.00
Detour Bridge over Little Salkehatchie River	Nec. Lump Sum	1,000.00
Detour Bridge over North Edisto River	Nec. Lump Sum	4,500.00
TOTAL		\$74,049.47

Pipe Mileage Above Rails

The natural gas industry now has more than 282,000 miles of pipeline in service throughout the nation—50,000 miles more than the country's total rail mileage—and more is on the way.

Latest figures indicate the natural gas

pipeline will increase 26,513 miles through government authorization of \$1,682,000,000 worth of natural gas facility construction.

Still pending authorization by the Federal Power Commission is a 12,700-mile extension to the natural gas pipeline at an estimated cost of \$873,936,000.

Southern Construction Projects

VIRGINIA

(Continued from page 34)

CAROLINE COUNTY—Board of Education let contract to A. F. Barnett, Mechanicsville, \$161,507 for C. T. Smith School.

CAROLINE COUNTY—Board of Education, Bowling Green, let contract to English Construction Co., Altavista, \$432,000, for Union High School.

CATAWBA SANATORIUM—State Board of Health, Richmond, authorized to consult with foundation engineers on sinking of part of the foundation for \$1,500,000 infirmary.

CLINTWOOD—Dickenson County plans three schools, \$800,000.

FAIRFAX—Fairfax County Board of Supervisors let contract to Luck Construction Co., Richmond, for installation of 81,378 feet of sanitary sewers, sewage lift station, \$437,341.

FALLS CHURCH—Falls Church School Board let contract to B & J Construction Co., Washington, D. C., \$980,952 for Falls Church Junior and Senior High School.

FORT BELVOIR—Corps of Engineers, Washington, D. C., received low bid from W. M. Chappell, Washington, D. C., \$101,000 for communications building.

FREDERICKSBURG—Mary Washington College let contract to Irons and Reynolds, Inc., Washington, D. C., \$1,061,000 for fine arts building.

GATE CITY—City received low bids for water supply improvements as follows: Division No. 1, 1 1/2 M.G.D. conventional filtration plant, 70,000 gals. concrete tank and raw water pumping station, including pumps and all equipment, Boyd and Goforth, Inc., Pine-

ville Road, Charlotte, N. C., \$115,300; Division No. 2, Tipton Construction Co., Bristol, Tenn., for 6,000 lin. ft. 8" C.I. pipe, appurtenances and estimated 20 per cent rock excavation.

HARRISONBURG—Madison College plans \$545,000 science building.

KING & QUEEN COUNTY—Board of Public Instruction received low bid from Thorington Construction Co., Richmond, \$264,000 for colored high school.

LOUISA COUNTY—County School Board received low bid from Ivy Construction Co., Charlottesville, \$327,637 for Central High School for Negroes.

NANSEMOND COUNTY—Board of Education let contract to S. S. Kea, Ivor, \$279,800 for East Suffolk Elementary School.

NEWPORT NEWS—First Baptist Church received low bid from Endeck-White Co., \$199,772, for alterations and additions to church.

NEWPORT NEWS—Warwick County Board of Supervisors plan \$1,250,000 school construction.

NORFOLK—Midtown Development Corporation let contract to Virginia Engineering Co., Newport News, \$325,000, for department store, Midtown Shopping Center.

NORFOLK—Midtown Development Corporation plans 5 and 10 cent store, Ward's Corner, \$1,000,000.

NORFOLK—Housing Authority received low bid from John A. Johnson & Sons, Inc., Washington, D. C., \$2,597,000, for low rent housing project No. Va-6-6.

NORFOLK—City sold \$550,000 bond issue for public improvements to R. S. Dickson & Co. and Assocs.

NORFOLK—Hofhelters, Inc. plans branch shoe store, Ward's Corner, \$250,000.

NORFOLK—House Appropriations Committee, Washington, D. C., approved \$1,850,000 appropriation for proposed power line from Bugge Island to Langley Field.

NORFOLK—L. S. Kresge Co. let contract to L. M. & Realty Corp. for 2-story store building, \$350,000.

PETERSBURG—City sold \$1,625,000 bond issue to syndicate headed by Chase National Bank of New York City for public improvement and refunding; more than half will be for school improvements.

RICHMOND—Virginia Electric & Power Co. plans 106 mile transmission line between Chesterfield plant near Richmond and Possum Point plant near Fredericksburg, \$2,700,000.

RICHMOND—Department of Highways let contracts for projects in following counties: **Fulaski**—U. S. 11, 0.56 mi. macadam widening; Pendleton Construction Corp., Wytheville, \$147,078.

Southampton—U. S. 58, 4.0 mi. 24-ft. conc. pavt.; Bove Contracting Co., Inc., Augusta, Ga., \$283,119.

Accomack—U. S. 13, 3.02 mi. 24-ft. conc. pavt., paralleling existing road to provide dual highway between Zion and Nelsonia; Bero Engineering & Construction Corp., Hampton, \$257,674.

Tazewell—U. S. 460 and 19, 2.21 mi. macadam pavt. and railroad underpass west of Tazewell; Ralph E. Mills Co., Inc., Salem, \$203,757.

Langcaster—Rt. 200, 4.08 mi. variable width pavt. at Whitestone; T. F. Franklin, Salem, \$82,092.

Albemarle—Sec. Rt. 641, 3.79 mi. hard surf. between Burnleys and Rt. 29; L. Williamson Co., Inc., Charlottesville, \$57,133.

Clarke and Warren—Sec. Rt. 624, 6.9 mi. hard surf. and bridge south of Millwood; R. W. Mitchell Co., Winchester, \$121,206.

Elizabeth—Sec. Rt. 625, 1.346 mi. widening and reconstruction between Rts. 1304 and 1301; Clyde R. Royals, Hampton, \$54,717.

Goodland—Sec. Rt. 600, 4.66 mi. widening and reconstruction near Three Square; A. C. Shearer, Chapel Hill, N. C., \$80,806.

Russell—Rt. 82, 244-ft. bridge across Clinch River and roadway approaches at Cleveland; Alley Construction Co., Bristol, \$107,632.

Fauquier—Sec. Rt. 637, 172-ft. bridge across Hardwire River and roadway approaches; Moore Brothers, Staunton, \$99,570.

RICHMOND—State Highway Department received low bids for projects in following counties:

Princess Anne—U. S. 13, 1.32 mi. 4-lane divided conc. hwy., continuing dual Waterworks Road toward Little Creek; Ames & Webb, Inc., Norfolk, \$171,916.

Arlington—Rt. 120, 3-lane divided construction on Glebe Rd. between new Fairfax Dr. and Randolph St., eliminating bad intersection with Wilson Blvd.; W. H. Armstrong & Co., Washington, N. C., \$334,757.

Prince George and City of Petersburg—U. S. 460 and alternate 301, remodeling intersection of Rts. 460 and alternate 301, also building mile of heavy-duty highway eastward; W. H. Scott, Franklin, \$126,936.

Bath—Rt. 39, 1.32 mi. widening and reconstruction near West Virginia line; John A. Archer & Son, Wytheville, \$71,801.

Roanoke and Franklin—U. S. 220, 2.49 mi. new construction designed to continue 4-lane divided hwy. south from Roanoke to Boones Mill; W. E. Graham & Sons, Cleveland, \$224,928.

Dickenson—Sec. Rts. 607 & 670, 2.92 mi. hard surf.; John A. Archer & Son, Wytheville, \$39,884.

Alleghany—U. S. 60, 607-ft. bridge over Jackson River; McDowell & Wood, Salem, \$500,628.

RICHMOND—Union Station Church Congregation let contract for new church building to James Fox & Sons, \$500,000.

RICHMOND—Southern Biscuit Co. let contract to Wise Contracting Co., \$450,000 for addition.

RICHMOND—Department of Highways received low bid from John H. Mathis Co., Camden, N. J., for installation of diesel engines and complete repair of 2 Hampton Roads ferry boats, \$663,240.

RICHMOND—Ford Motor Co. let contract to Campbell Construction Co., Detroit, Mich., for new parts depot near Byrd Airport, \$1,000,000.

RICHMOND—Philip Morris & Co., Inc. plans \$1,500,000 stemmery, Petersburg Pike. **ROANOKE**—City sold \$4,050,000 bond issue to syndicate headed by First Boston Corp. of New York City, for sewage system.

ROANOKE—City Council received low bid

Ground Broken for International Minerals Plant

Ground was formally broken last month for International Minerals & Chemical Corporation's new plant food and superphosphate plant in North Fort Worth, Texas.

The new plant, scheduled for completion about June 15, 1951, will have an annual production capacity of approximately 40,000 tons of plant food and will represent an investment in land, buildings and equipment of approximately \$500,000.

"Fort Worth was chosen as the location for the plant," said Vice President Maurice H. Lockwood, "because of its outstanding position as an agriculture and livestock center, and because of the wonderful cooperation we received from the Industrial Department of the Chamber of Commerce in placing information and facilities at our disposal."

"One reason we chose the North Fort Worth site is that farmers bringing their cattle to the stockyards will find it a convenient place to load their trucks with plant food for the return trip home. The site was also chosen because of its convenience to Consolidated Chemical Industries, Inc., from which we will obtain sulphuric acid for the manufacture of superphosphate."

The new International plant will incorporate the most modern methods of fertilizer manufacture, including the latest materials handling systems obtainable. An overhead conveyor system will carry superphosphate from the superphosphate plant into the main mixing building, and manufacturing, bagging and storing procedures are all planned for highest efficiency and a minimum amount of delay for customers.

A canopy over one of the loading docks will make it possible to load and cover

plant food regardless of weather conditions. Special facilities for customers, including rest rooms, are planned.

The plant, office building and locker house are all laid out with future expansion in mind, Mr. Lockwood pointed out. The offices will be one story in height and will be consistent in design with other office buildings International has erected at its other plants.

The company has plants and offices in 50 cities and 20 states. In addition to manufacturing superphosphate and mixed fertilizers, it is the largest producer of phosphate, ranks third in the domestic production of potash, is one of the major firms in the chemical industry, and is the world's largest producer of monosodium glutamate, a master seasoning marketed under the trade name "A.C. cent." Its headquarters are in Chicago.

Representatives of the company who were at the ground breaking ceremonies, in addition to President Louis Ware and Mr. Lockwood, were Thomas M. Ware, chief engineer; J. F. Stough, northern general manager of the plant food division; F. H. Perrin, plant food division production manager, and H. E. Terwell, bulk sales representative of the Amino products division of the company, all of Chicago, and W. Q. Burns, district manager of the plant food division, Texarkana, Ark.

J. R. Murphy & Co. of Fort Worth is general contractor for the new plant. A. J. Sackett & Sons, of Baltimore, Md., will supply plant equipment; equipment for the manufacture of superphosphate will be obtained from Sturtevant Mill Co., Boston, Mass.; steel work will be supplied by Mosher Steel Co., Dallas, Tex., and the conveyor system will be purchased from Barber-Greene Co. of Aurora, Ill.

from Central Construction Co., Louisville, Ky., for lower river line, \$750,230 and Neal Construction Co., Salem, \$848,896 for upper interceptor lines, sewage disposal plant.

ROANOKE—Appalachian Electric Power Co. plans \$1,000,000 high voltage transmission station near Cloverdale in Botetourt County.

ROANOKE—City of Roanoke Redevelopment & Housing Authority received low bid from Goode Construction Corp., Charlotte, \$3,066,000, for housing project, No. Va-11-1.

STAUNTON—Virginia School for the Deaf and Blind received low bid from Castle Construction Co., Grottoes, \$409,337 for gymnasium.

VIRGINIA BEACH—Cavalier Hotel plans 42-room addition, \$200,000.

WARRENTON—R. G. R. Construction Co., New York, awarded contract, \$181,000, for family quarters, Vint Hill Farms Station.

WEST VIRGINIA

WEST VIRGINIA—Wheeling Steel Corp. has authorized and has under construction a multi-million dollar plant expansion program at its Mingo, Yorkville, Beechbottom and Benwood Plants, nearly \$4,000,000 of new construction was started at Wheeling Steel Yorkville Electrolitic Tin Plant.

BRIDGEPORT—Methodist church building planned, \$500,000.

CHAPMANVILLE—Logan County Board of Education plans addition of 7 classrooms, study hall, gymnasium, locker and shower room, and minor alterations to Chapmanville High School, \$250,400.

CHARLESTON—State Road Department received low bids for projects in following counties:

Jefferson—Proj. 3353, grad., drain., macadam base and asph. conc. surf., 0.488 mi.; Potomac Construction Co., Martinsburg, \$32,817.

Logan—Proj. U-296(5), 1.237 mi. Logan Relocation Rd., for cement conc. pavt.; Oscar Vecillio, Beckley, \$437,081.

Roane—Proj. F-148(6), 0.592 mi. Spencer-

Walton Rd., for grad., drain., cement conc. pavt. and guardrail; Howard Price & Co., Huntington, \$338,663.

Mercer—Proj. F-308(3), Hiawatha bridge 1829; Monty Brothers, St. Albans, \$92,723.

CLARKSBURG—Veterans of Foreign Wars, Meuse-Argonne Post, plans home, \$125,000.

CLARKSBURG—Baptist Church Congregation plans education building, \$150,000.

CLARKSBURG—First Presbyterian Church Congregation plans class room building, \$150,000.

CLARKSBURG—Hope Natural Gas Co. let contract to Pipe Line Construction and Drilling Co., Harrisburg, Pa., \$790,000, for gas line between Fink gas storage area and L. L. Tonkin Compressor Station.

HUNTINGTON—State Board of Education let contract to Neighborgal Construction Co., \$359,850 for Northcott Hall at Marshall College.

HUNTINGTON—Owens-Illinois Glass Co. plans \$1,125,000 furnace.

HUNTINGTON—West Virginia Steel and Manufacturing Co. plans \$2,250,000 expansion program.

INSTITUTE—State Board of Education let contract to C. H. Jimison & Sons, Huntington, \$798,800 for science building at West Virginia State College.

LOGAN—Logan County Board of Education plans following schools: 5 classrooms, offices and kitchen at Aracoma Grade School for Colored, \$90,000; classrooms and cafeteria for Logan High School, \$180,000 and addition of 12 classrooms, gymnasium, locker rooms, administrative offices, storage and supply room at Logan Junior High School, \$317,170.

MASON—Boone County Board of Education has plans and specifications for gymnasium and four classrooms at Scott High School, \$140,000.

MAN—Logan County Board of Education selected Frampton and Bowers, Huntington, Archt. for 12 classrooms, multiple purpose room, office for South Man Grade School, \$277,200.

OMAR—Logan County Board of Education plans six classrooms, multiple purpose room & office for Omar Grade School for Negroes, \$102,900.

PHILIPPI—Alderson-Broadbuss College plans \$500,000 hospital.

POINT PLEASANT—School construction program of Mason County includes the following projects: four classrooms at Letart Elementary School, \$50,000; six classrooms for New Haven Elementary, \$58,000; six classrooms at Mason Elementary School, \$58,000; addition to Ordinance Elementary, \$50,000; gymnasium-auditorium and four classrooms at Pt. Pleasant Junior High School, \$140,000; two classrooms for Henderson Elementary, \$20,000; four classrooms at Beale School, \$50,000; three classrooms for Beech Hill School, \$30,000; two classrooms to Sunnyside Elementary School, \$20,000; gymnasium-auditorium and four classrooms for Wahama High School, \$100,000.

PRESTON COUNTY—Monongahela Power Company and Potomac Light and Power Co. plan generating plant, \$200,000,000.

SETH—H. B. Agsten, Jr., Charleston, has work underway, \$132,010, addition to Sherman High School.

WEBSTER SPRINGS—City let contract to Earl T. Browder, Inc., St. Albans, \$384,600 for Webster County Memorial Hospital.

WEIRION—National Steel Corp. will spend \$7,078,425 for expansion of facilities.

WELCH—McDowell County Board of Education plans \$2,000,000 school construction program during 1951.

WESTON—West Virginia Board of Control plans \$330,000 for criminally insane and \$550,000 for renovation and fire-proofing six old wards at West Virginia Hospital for Insane.

WHEELING—City plans \$1,250,000 repairs to public schools.

WHEELING—Continental Baking Co. has authorized an expansion program, \$150,000.

WHEELING—City plans four swimming pools, \$300,000.

\$30,000,000 Expansion Planned at Texas City

A \$30,000,000 expansion program at Monsanto Chemical Company's Texas City, Texas, plant to manufacture a chemical vital to war production has been announced by President William M. Rand.

Mr. Rand said the plant will turn out acrylonitrile, which has not previously been manufactured by Monsanto, plus other related chemicals. It is an important ingredient in the manufacture of synthetic fibers, plastics and Buna-N rubber, also a synthetic.

Construction of the new facilities is expected to start immediately and "will take several years to finish," Mr. Rand stated. Upon completion, it will nearly double the size of the present plant.

The expansion program follows Monsanto's reconstruction of its facilities at Texas City, which were destroyed in the explosion of the French freighter "Grandcamp" there in April 1947. Rand said the destroyed facilities have been completely rebuilt and improved.

The plant at present manufactures styrene, which is used in making plastic products. It employs about 500 persons now.

The expanded facilities will operate under the present plant management headed by former St. Louisian Joseph R. Mares, vice president of Monsanto and general manager of the Texas Division.

The new facilities will embody new chemical processes in the production of acrylonitrile and other basic chemicals which company engineers and research scientists have worked out and tested in pilot plant operations.

High Home Building Seen by Coogan

The president of the national home builders association told Richmond builders home building on a high level is predicted.

Thomas P. Coogan, a Florida builder himself, predicted a continued high level in the next few months—unless there was a full-stop order brought out by an all-out emergency.

"At the present time there is no indication and no thinking in Washington of a complete curtailment of housing," he told about 450 members and guests of the Richmond Home Builders Association.

He said that government agencies are determined this time to avoid the housing shortage and high prices brought on by World War II.

Home builders throughout the nation already have commitments of 400,000 units begun before October 12, when Regulation X went into effect, Mr. Coogan said.

For that reason the credit controls should be of "very small concern" to home building for the next few months.

After that, he predicted, builders will be surprised at the number of people who will dig up the higher down payments and boosted monthly payments required by the regulations.

He had two warnings: Don't plan beyond sources of building materials, a situation he said was growing when the Korean incident put on the damper. Also do not put up a cry to have this district declared a defense area in order to get allocations of scarce materials.

Load Curbs Likely On Virginia Roads

Emergency load restrictions will likely be placed on many State roads when warmer weather brings a thawing of deep frost now in the ground over most of Virginia, says the State Highway Department.

By posting the light-duty roads against heavy trucks, the highway department hopes to minimize road break-ups which might follow a sudden thaw.

The restrictions would apply mostly to secondary roads and light-duty primary roads, the department said. Every effort will be made to retain the present limits of 20 and 25 tons on the heavy-duty interstate and intercity routes. Most US-numbered roads are in this category.

The department's eight district engineers have been authorized to post the routes in their respective areas if and when restrictions become necessary.

All but the strongest secondary routes would be posted for eight tons gross weight. Lightly surfaced primary roads would be restricted to eight or twelve tons.

The district engineers have been instructed to impose the restrictions as soon as they observe signs of softening or other symptoms of unusual weakness.

School busses and local milk trucks will be exempt from all restrictions, a spokesman said. Special permits will be issued to allow the movement of other emergency or critically-needed materials.

Frost ranging to more than six inches has been reported in many areas of the state. Following a thaw, road bases will become soft and heavy loads could cause widespread damage, say engineers.

Equipment and Material Makers' News

Clamshell Buckets Catalog

A new 8-page booklet on Clamshell buckets has been issued by the George Haiss Manufacturing Co., Inc., division of Pettibone Mulliken Corp., of New York and Chicago.

Multi-sheave excavating buckets, trenching buckets and rehandling buckets are illustrated and discussed as are special construction features like the heavy duty head frame, wedge-lock dead ending, heavy section connecting arms, corner hinge brackets, digging teeth with chisel or pick points, and others.

One page is devoted to the Haiss Power Wheel bucket and the coal and snow "special," and two pages of dimensions and specifications are included for all buckets discussed.

The back cover illustrates other products by Haiss including bucket loaders; flat belt, package, drag, sectional and trough conveyors; car unloaders; portable batch asphalt plants; speedloaders; and crushing, screening and washing plants.

Allis-Chalmers Releases Motors Bulletin

Features of Allis-Chalmers large two-pole squirrel cage, AC induction motors are given in a new bulletin, No. 05B7550, released by the Allis-Chalmers Manufacturing Co., Milwaukee, Wis.

A cross-section view of a typical normal torque, low-starting current motor shows the construction of stator winding, bearings, ventilation, squirrel cage winding, rotor, stator, and bearing brackets. This is supplemented by additional photographs of motors and motor parts.

The construction features described in the bulletin are available in Allis-Chalmers standard 40C rise continuous rated, two-pole, 60-cycle, 1800-rpm, bracket-bearing, squirrel cage motors for direct-connected drives in all ratings 900 horsepower and larger.

The motors are built for boiler feed pumps, oil pipeline pumps, centrifugal blowers, de-scaling pumps, and other high-speed drives.

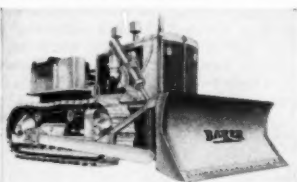
Matched Equipment Available

New bulldozers, graders, and road rippers, for the new and more powerful models HD-9 and HD-15 Allis-Chalmers tractors, are announced by Baker Manufacturing Co. of Springfield, Ill. The implements round out a complete line of matched earthmoving equipment for A-C tractors. Baker having previously announced new blades for the largest and most powerful unit, the HD-20, and the smallest, the HD-5.

Both engine-mounted hydraulic and cable operated models are available for the three larger tractors. Blades for the HD-5 come only in hydraulic control type.

The new Baker products are more ruggedly built to match the greater size and power of A-C's new larger units. All hydraulic models retain the special Baker features of direct lift, positive down pressure, positive hydraulic hold and engine accessibility. Achievement of "fingertip" control for the new Baker attachments is the outstanding design feature, gained through the short linkage between blade control lever and hydraulic control valve. This short linkage reduces working and wearing parts, so that the operator can feel any change in blade position and maintain full positive control with greater ease. Continuation of a high level of control sensitivity over the long working life of the equipment is assured. Matching blades for the HD-7, 10 and 19, which are superseded by the 9, 15 and 20, continue available.

The Baker line also includes sheepsfoot tamping rollers, heavy duty rippers, snowplows and power control units.



Allis-Chalmers HD-15 tractor with Baker Bulldozer.

General Motors Operates 350 Diesel Service Stations

The GMC Truck and Coach Division, already operating the largest diesel truck service network in the United States, has taken further important steps to build and strengthen its service system to keep up with the fast trend toward dieselization in the trucking industry.

With nearly 10,000 GMC diesel trucks or tractors operating throughout the country, the responsibility for proper servicing is obviously a tremendous one. At present, GMC has approximately 350 diesel service stations, each of which has special diesel engine tools, trained diesel mechanic personnel, and a required stock of diesel parts.

At the end of 1951, according to present plans, GMC will have almost tripled its diesel service facilities by training 1,500 diesel mechanics from 1,000 dealer points across the nation.

The GMC Parts and Service Department sets rigid standards for these diesel service stations and backs them up with service training programs second to none.

Since 1938, GMC has conducted a diesel service training school at General Motors Institute, Flint, Mich., for journeyman mechanics wanting to learn diesel fundamentals, construction and maintenance operations. This two-week school, which has graduated more than 800 trained diesel mechanics, covers every phase of the 71 diesel engine with more than 50 per cent of the school time allotted to actual laboratory work on live engines. Supplementing this school since 1947 has been a similar one at Oakland, Calif., which to date has graduated more than 200 mechanics.

Newest GMC diesel service training program now under way is the use of mobile school units which will further increase the number of diesel mechanics in the far-flung GMC system. Mounted on GMC 650 diesel trucks, the units will move into every major city in the nation to bring diesel education right to the dealer's doorstep.

This program is a five-day course, limited to 12 students per group. Each student will work on live engines and sub-assemblies while being taught operation, maintenance and overhaul. In these mobile schools, which are under the supervision of factory-trained instructors, every man will gain actual experience in performing all the mechanical operations on the engines.

Lima-Hamilton Merges with Baldwin Locomotive

Baldwin Locomotive Works and Lima-Hamilton Corporation recently consummated the agreement under which Baldwin purchased and acquired substantially all of Lima's assets in exchange for shares of Baldwin common stock which are now available for distribution to Lima shareholders on a share for share basis through the Fifty-Third Union Trust Co. of Cincinnati, Lima's depository and agent.

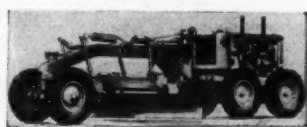
The name of the Baldwin Locomotive Works has been changed to Baldwin-Lima-Hamilton Corp.

Heading Baldwin-Lima-Hamilton are Marvin W. Smith, who remains as president, and George A. Rentschler, chairman of the board. Mr. Rentschler has been chairman of the executive committee of Lima-Hamilton. Charles E. Brinley has resigned as chairman of the Baldwin board but will continue as a director.

Other newly-elected officers of Baldwin-Lima-Hamilton are: Walter A. Rentschler, vice president in charge of Lima-Hamilton Division; A. A. Byerlein, J. F. Barnhart and C. T. Ziegler, vice president Lima-Hamilton Division; W. R. Parshall, general controller; Perry A. White, controller, Lima-Hamilton Division; J. R. Connaughton, assistant secretary, and J. W. Llewellyn and Orin Greiwe, assistant treasurers.

Products from the Baldwin-Lima-Hamilton plants at Burnham and Eddystone, Pa.; Hamilton, Lima and Middletown, Ohio; Rochelle, Ill.; San Francisco, Calif., and Greenwich, Conn., will serve these basic industries: railroads, construction, automotive, shipbuilding, aviation, hydro-electric power, waterworks, and sewage, mining and quarrying, lumber, plywood and wallboard, paper, petroleum, chemicals, metals production and fabrication, rubber and plastics, glass, food processing and ordnance. Employment will approximate 12,000.

Galion Announces New Motor Grader



Galion 118 grader with constant mesh transmission.

The Galion No. 118 Motor Grader is of the extra heavy-duty class, and is said to feature a greatly improved transmission of the constant-mesh type, according to the Galion Iron Works & Manufacturing Co., Galion, Ohio. It has six overlapping forward speeds ranging from 1.3 to 22.6 miles per hour and two reverse speeds—providing a satisfactory range for all work or travel requirements. An exceptionally high reverse speed of 10.5 is obtainable. This feature is especially desirable when restricted working conditions do not permit turning grade around. Only one lever is needed for the shifting of all gears, forward or reverse.

Among the features claimed for the Galion Model No. 118 are a 100-horsepower diesel engine; positive all-gear, four-wheel tandem drive; full hydraulic control, and extra-rugged box-type single member frame, high-arched for maximum adjustment of blade. Also included as standard equipment are hand steering with hydraulic booster and large front tires same size as rear tires. Available, as extra equipment, is a hydraulic shiftable moldboard which permits a maximum extension of the blade 103 inches beyond rear tires with a 13-foot moldboard. Weight is from 23,560 pounds up depending upon extra equipment.

Asphalt Institute Elects

The board of directors of the Asphalt Institute has elected Frank R. Field, of Esso Standard Oil Co., chairman of the executive committee for the coming year and re-elected Bernard E. Gray, president.

Mr. Field joined the Esso Standard Oil Co. in 1923 and for 14 years was manager of asphalt sales in New Jersey. In 1937 he joined the New York state handling special sales of asphalt to the roofing and industrial trades. He became assistant manager in 1941, and in 1943 manager of the entire asphalt operations of the company, which position he now holds.

The executive committee will have, in addition to Messrs. Field and Gray, the following membership: Inghram Grayson, Lion Oil Co., retiring chairman, and the five newly-elected vice presidents, L. P. Street, American Bitumuls Co., for Division I; Lysle W. Walker, Leonard Refineries, Inc., for Division II; C. E. Cox, Carter Oil Co., for Division III; Robert O. Wilson, Cosden Petroleum Co., for Division IV; W. G. Julier, General Petroleum Corp., for Division V.

New members elected were Golden Bear Oil Co. of Los Angeles, Calif., and Farmers Union Central Exchange of Billings, Mont. Herbert Spencer was re-elected secretary of the Institute. George R. Christie, Socony-Vacuum Oil Co., Inc., was re-elected treasurer, and John N. Smith, also of Socony-Vacuum Oil Co., Inc., assistant treasurer.

100,000th Truck Made

The GMC Truck and Coach Division of General Motors, Pontiac, Mich., has broken all peacetime production records in its 48-year history by rolling the 100,000th truck off its assembly lines, was announced by general manager Roger M. Kyes.

It marked the first time GMC ever has reached 100,000 non-military units in one year and with five weeks of 1950 yet to go the record will even further surpass the former mark of 92,677 trucks built in 1948. The 1948 record was passed on November 6. The 100,000th unit was, fittingly, a model 650 diesel, the new lightweight diesel-powered truck-tractor introduced this year that has paced the sharp rise in GMC diesel sales.

Shunk Manufacturing Appoints New General Manager

Raymond F. Allen has been appointed general manager of Shunk Manufacturing Co. of Bucyrus, Ohio, producer of blades for all types of earth moving equipment. Mr. Allen was formerly on the staff of the vice president of Brewster Aeronautical Corp. He is a graduate of the University of California and the Harvard Business School. J. Austin Carrington has been appointed director of sales for the Shunk Manufacturing Co. of Bucyrus, Ohio, makers of blades for all types of earth moving equipment. Mr. Carrington was formerly marketing and distribution executive with the General Electric Co., and brings to Shunk an outstanding record of experience in heavy industry. He is a graduate of DePaul University. Shunk is probably the oldest and largest manufacturer of blades for all types of earth moving equipment.



R. F. Allen

Walter A. Wind has been appointed assistant to the general manager of Shunk Manufacturing Co. Mr. Wind was formerly production consultant to the Vermont Bureau of Industrial Research. Prior to that he was with the Titan Metal Manufacturing Co., and Carnegie-Illinois Steel Corp. Mr. Wind received his engineering degree from Carnegie Institute of Technology, and a masters degree in Industrial Engineering from the University of Pittsburgh.

Universal Adds Model to Traveler Series

A new addition to its Traveler series of gravel crushing, screening and loading plants has been announced by Universal Engineering Corp., Cedar Rapids, Iowa—Division of Pettibone-Mulliken Corp. of Chicago. Named the Model C.S.E. Traveler, the plant consists of a jaw crusher, shovel loading hopper with reciprocating feeder and trap gate, feed conveyor, one-deck inclined gyrating screen, delivery conveyor, return bucket elevator, and power unit mounted on a steel gooseneck truck with pneumatic tires. The C.S.E. Traveler is designed to produce accurately-sized material for road building and maintenance with a single crusher in a closed circuit. Four sizes are available with 916, 1016, 1020, or 1024 jaw crushers in either bronze or roller bearing types.

Universal Traveler Series plants are designed for "crush and travel" operations where production requirements are moderate. Compact design with minimum weight and high portability permit them to operate in "out-of-the-way" locations wherever gravel is available. The complete series of Traveler plants now include the C.S.E., C.S., and T.S. The C.S. and T.S. are single-pass gravel plants that screen out finished pit run, crush the oversize, and blend the natural with the crushed material in the loading operation. They are also available with 916, 1016, 1020, and 1024 jaw crushers in either bronze or roller bearings.

New Brick Book Published

"Brick and Tile Engineering," a new volume of engineering data on brick and tile construction, has been published by Structural Clay Products Institute, Washington, D. C. The handbook of design was written by Harry C. Flummer, director of Engineering and Technology for the Institute.

The 392-page volume is a revised edition of two books, "Brick Engineering" and "Tile Engineering," previously published by the Institute. It contains the best and latest engineering information on clay masonry construction now available anywhere.

"Brick and Tile Engineering" describes the origin, manufacture, types and properties of structural clay products and the properties and design of brick and tile walls. Chapters are devoted to discussions of brick and tile wall sections and details, mortar, design of chimneys and fireplaces, and fireproofing and firing.

General applications for masonry construction are covered, along with bonds and patterns of brick and tile walls. A special chapter is devoted to the advantages of modular coordination in building with brick and tile.

Portable Air Compressor Revealed by Worthington

A new compressor described in Bulletin H-850-B72 is announced by Worthington Pump and Machinery Corp., Harrison, N. J.

Two-staged, air-cooled, this 30 cubic foot capacity compressor has a maximum operating pressure of 150 pound. It is equipped with ASME air receiver, oil bath air cleaners, protective V-belt guard.

Features include: circumferential cooling fins, tube and fin-type, air-cooled intercooler, positive by-pass unloader holds inlet valve open during idling period; Worthington Feather Valve, separate, close-grained cast iron honed cylinders, full floating wrist pins, oil dippers for controlled lubrication, aluminum low-pressure piston and cast iron high-pressure piston of equal weight for proper balance.

The compressor is available in either a trailer model having an overall length of 74-in. or a hand truck model with an overall length of 65-in.

Brochure Covers Major Dams

American Hoist and Derrick Co., St. Paul, Minn., announces a new illustrated book containing pictures of the nation's greatest dam jobs—Jarrison, Friant, Grand Coulee, Bull Shoals and many others.

The 24-page, two-color brochure tells how dam builders use the size, power and reach of American revolver cranes on some of the world's biggest construction jobs.

Manitowoc Crane Described in New Catalog

The Manitowoc Model 3900 long-reach crane and dragline is described in a 12-page catalog just released by the Manitowoc Engineering Works, Manitowoc, Wis. The machine is rated as a 3-yard dragline, with lift capacities of 60 tons at 12-foot radius and 30 tons at 30-foot radius.

The bulletin lists complete working ranges and capacity tables, and explains how the added capacity claimed at long radii is obtained. Pictures and text illustrate features and machinery details, with gear diagrams and photos of optional equipment available for special jobs. A half page of diagrams and photos show how the crane can be loaded and unloaded for rail shipment by straddle pipeline ditches. Two full pages illustrate job applications.

Lorains and Pipelines

A new bulletin just published by the Thew Shovel Co., Lorain, Ohio, features the application of Lorain power shovels and cranes to pipeline construction. Special attention is given to the Lorain "Pipeliner" a specially designed hoe with wide gauge crawlers to straddle pipeline ditches. Application of other types of Lorain equipment such as clamshells, draglines and cranes is also depicted. The story of the use of rubber-tire Lorain Moto-Cranes for pipelining and how they can roll long distances quickly to widely separated spreads is also included. The title of this colorful and heavily illustrated 12-page book is "Lorains on Pipeline Construction."

Torque Converter Model Made

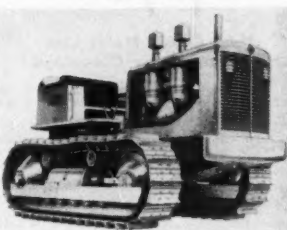
A device to demonstrate the operation of the Torque converter which is a component part of many automatic transmissions used in construction and industrial equipment has been developed for Detroit Diesel Engine Division by Ideal Models Co. of Detroit.

The device is constructed entirely of transparent and colored plastics and is a model of the Torque converter used with General Motors Series 71 and Model 8-110 Diesel engines.

The model is held securely to a table or show case by rubber suction cups and is actuated by a small crank. The crank sets the "pump" section of the converter in action and the resulting flow of fluid which causes the transfer of power from the "pump" to the "turbine" is easily discernible. In a matter of seconds it offers an interesting and convincing explanation of the converter's operation including its automatic change to and from fluid coupling drive.

The model is available for inspection at GM Diesel distributors' and dealers' showrooms and is also available for use in engineering schools and colleges.

Allis-Chalmers Adds Two Crawler Tractors



New Allis-Chalmers HD-15 tractor.

Two new crawler tractors are being added to the Allis-Chalmers line according to an announcement by W. A. Roberts, executive vice president and manager of the tractor division. With these two new models—known as the HD-9 and HD-15, Allis-Chalmers now offers a completely modern tractor in each of the four major power classes.

The new units, being produced in the company's expanded Springfield, Ill., Works, are scheduled for delivery to dealers early this year.

Company officials point out that, while both tractors are new "from the ground up"—with advanced design, materials and power ratings, each is the product of years of research and testing. In addition, both models will provide buyers with practically all the important features of the two popular Allis-Chalmers tractors introduced since 1946.

With each of its four crawler models providing more weight and power than previously considered standard for its class, Allis-Chalmers states that its line now sets a new standard in tractor classification and invites tractor users everywhere to ask A-C dealers for a demonstration to compare performance and design advantages. The HD-9 weighs 18,500 pounds, and has a drawbar horsepower rating of 70. The larger HD-15 weighs 27,500 pounds, and develops 102 horsepower at the drawbar. Both have six speeds forward and three reverse.

Most of the features tractor owners, operators and servicemen are likely to find of interest are common to both the HD-9 and HD-15. One of these is a constant mesh transmission, with separate reverse gears, that lets an operator shift from forward to reverse in any speed with just one movement of a single control lever.

Power is provided for both the HD-9 and HD-15 by heavy-duty General Motors 2-Cycle Diesels. These engines, recognized for their smooth operation and low fuel consumption, utilize a unit injection system which eliminates high pressure fuel lines and permits instant electric starting on Diesel fuel. The 2-Cycle characteristics of these GM engines gives them a high horsepower-per-pound ratio.

Another important feature is unit assembly construction—a design advantage that enables servicemen to remove and install each unit in the power train—engine, clutch, transmission, steering clutch and final drive—without disturbing related assemblies.

A third major benefit is the use of positive seals in final drive, truck wheels, idlers and support rollers. By retaining grease for a period of 1000 hours, these spring loaded seals make it possible for owners to operate the new tractors for six months—on a 40-hour work-week basis—without further lubrication of the track assembly.

Nelson "Loadall" Handles Many Materials

A new, all-purpose loader known as the "Loadall" has been introduced by the N. P. Nelson Iron Works, Inc., of Clifton, N. J. The manufacturer claims that it is the only machine now in production that will handle sand, snow, gravel, coal, cinders, humus, leaves, and salt without belt changes or use of special attachments.

The new machine is specifically designed for the smaller municipality or contractor with year-round truck loading problems and a limited budget.

The "Loadall" travels under its own power at road speeds up to 10 miles per hour, with working speeds to 6 1/2 miles per hour. Loads heavy materials at from 1 1/2 to 2 1/2 cubic yards per minute—snow at from 6 to 8 cubic yards per minute. Twenty-four-inch spirals have replaceable toothed digging edges. It is powered by a four-cylinder, air-cooled gasoline engine.

Equipment and Material Makers' News

New Cable Hoist Line Announced by Cleveland

A new line of heavy-duty electric cable hoists is announced by the Cleveland Chain & Manufacturing Co., Cleveland, Ohio.

Hoists are manufactured in $\frac{1}{2}$, 1, $1\frac{1}{2}$, 2, 3 and 5-ton capacities. They will be sold under the trade name of "Bob-Cat" and will be distributed by other Round Associate Chain companies located throughout the country. The Round Associate group includes the Southern Chain & Manufacturing Co., Birmingham, Ala.

An outstanding Bob-Cat feature is its total enclosure of the motor within the cable drum. This greatly reduces overall dimensions and affords substantial weight savings by comparison with hoists that employ conventional external type overhanging motors. Due to the enclosed hoist design, motors are completely protected against moisture, splashing liquids, weather, dust and corrosive atmospheres. The Bob-Cat line was originally designed by William F. Wright, well-known hoist engineer.

Hoists are powered by high torque Ohio motors specially manufactured for use with Bob-Cat units. Gear reduction is by means of a double internal (epicyclic) gear train that incorporates two Weston-type load brakes. Motor brake is of the equalizing solenoid type connected to an up-limit cutoff switch.

All Bob-Cat load-lifting and carrying parts are made of steel forgings and castings. Safety factor is in excess of 6 to 1. Load hook oscillates on ball bearings and swivels on roller bearings. It is suspended on a 5/16-inch pre-formed plow cable. Hook can be replaced without dismantling any part of hoist.

Designed for operation on 220, 380, 440 or 550-volt, 3-phase, 60-cycle current, Bob-Cats are available with either pendant rope control or push-button control on pendant cable. The latter style has a strain relief cable from the hoist to the control. A transformer in the electrical supply line cuts voltage at the control to 110 volts.

Joy Announces Light

A new low-voltage portable lighting system for mining and construction work, the Joy Lite, has recently been announced by the Joy Manufacturing Co., Pittsburgh, Pa. Driven by compressed air, the Joy-Lite will develop an output of 250 to 350 watts (power to operate four high-powered sealed-beam flood or spot lights) with air consumption not exceeding 25 C.F.M. For protection from dirt and dripping water, the generator is mounted in a steel box which is equipped with a carrying handle for easy portability. Lamps have tripod swivel bases, which can be used as column clamps, and hooks which serve as hangers. The unit weighs 48 pounds. Complete details are in Bulletin 87-1.

Arthur W. Dale Dies

Arthur W. Dale, 53, general manager of sales of the mining division of Gardner-Denver Co., died suddenly in December at his office in the company's plant in Quincy, Illinois.

Mr. Dale had been associated with Gardner-Denver Co. since 1916. He first worked in the Denver plant of the company. For a number of years he was manager of the Pittsburgh office. He was director of South African operations, with headquarters in Johannesburg, for five years. He was called to Quincy in 1934 to take over the duties of the manager of mining sales.

In the last three years, Mr. Dale had made two trips to South and Central Africa and one trip to Europe, in addition to numerous shorter trips into mining areas of the United States, Canada and Mexico. He was a member of the American Mining Congress.

High Bank Cutting

High bank cutting calls for one of the more difficult blade positions, often involving time-consuming manual adjustment of linkages to attain such an extreme position. The operator of a 4D-series Warco can elevate and angle the blade entirely by manipulation of the cab controls, saving valuable time on the job, according to the manufacturer, W. A. Riddell Corp., Bucyrus, Ohio.

Allis-Chalmers Issues Car Shaker Bulletin

A car shaker for unloading granular material from hopper-bottom gondola cars is described in a bulletin, 07B7221A, released by Allis-Chalmers Co., Milwaukee, Wis.

Construction features of the shaker are given along with specifications and a cross-section through the vibrating mechanism.

The shaker, designed to save time and money and to eliminate danger to operating personnel, has applications in power houses, steel mills, sand and gravel, chemical, coke and glass plants, coal mines and docks, sugar beet and paper mills, foundries, and building block and slag product manufacturing plants.

Bros Sno-Flyr Used with Allis-Chalmers Grader



Sno-Flyr mounted on AD-4 Allis-Chalmers motor grader.

William Bros Boiler and Manufacturing Co. of Minneapolis is announcing the combination of its Sno-Flyr rotary plow with the Allis-Chalmers motor grader.

This Sno-Flyr and grader combination not only provides fast, efficient snow removal, but also savings in extra equipment, the company points out.

In addition, when snow plowing is over, the auxiliary engines that were used to power the plow are available for countless other jobs.

Bros announces that their modern design Sno-Flyr rotary with its new and exclusive features including close-to-ground cleaning, snow streams individually controlled from the cab, full 360-degree revolving chutes allowing complete casting control in any direction, wider plowing width and many others, is easily mounted on your present or new Model AD-4 Allis-Chalmers Grader. The combination makes a completely cab-controlled snow plowing operation, giving positive maneuverability of plow and grader without effort.

The company also points out that it is not necessary to have a factory mounting. The Sno-Flyr can be delivered in "package form," ready for mounting on your grader by your Allis-Chalmers dealer.

Forged Manhole Steps

Developed in collaboration with leading sanitary engineers, Aluminum Company of America is now marketing forged aluminum manhole steps and ladder rungs for municipal and industrial installations.

Recommended for both interior and exterior use, the new steps have been forged from high strength aluminum alloys. Three sizes are featured, adaptable to concrete, brick, or concrete block wall construction according to the projection required.

Alcoa aluminum alloy 61S-T6 has been specified for high corrosion resistance and maximum strength. Non-sparking characteristic of aluminum is particularly advantageous where explosive gases or dust may be present.

CraneMobile Booklet

Bay City Shovels, Inc., Bay City, Mich., has released a 24-page catalog for the CraneMobile, available in 20- and 25-ton capacity. Machine design and job applications are featured through the use of 74 illustrations.

Details are given of the machinery assembly and the gantry, pin-connected boom and jib. The specially designed CraneMobile carrier which is available in five models—6 x 4 and 6 x 6 drive, with eight- and nine-foot over-all width is also pictured.

The remainder of the book shows the CraneMobile at work on a variety of jobs.

Marion Representative in the Sooner State

Exclusive representative in the state of Oklahoma of the Marion Power Shovel Co., Marion, Ohio, is the Townsco Equipment Co. of Oklahoma City and Tulsa. Townsco is believed to be one of the state's largest most modern, and completely-equipped firms in the construction machinery and material supply field. Organized in 1934 and incorporated about a year later, Townsco today handles 13 major industrial accounts.

The company's headquarters building at 1700-1708 N.W. Sixth Street in Oklahoma City was opened in 1941. Facilities include a display room, a warehouse, a shop, storage warehouse, three offices and a truck loading dock.

Tulsa, the branch office at 202 South Lansing was opened in 1946 and remodeled in 1949.

Approximately \$110,000 in parts and material are in stock at Oklahoma City and \$50,000 at Tulsa.

Townsco employees total 35. Twelve pick-up trucks are operated by the company and a teletype machine and Western Union direct wire hook-up to speed company communications with field contacts are maintained.

George L. Townsend, formerly with Fairbanks, Morse and Co., is president of Townsco Equipment Co. After graduating from the University of Oklahoma in 1923 with a degree in mechanical engineering, he had wide experience in engineering and sales work.

Other Townsco officials include D. R. Thomas, vice president, who purchased a part interest in the firm in 1942 after 30 years' experience in the automotive parts industry; L. Townsend, secretary-treasurer; R. J. McCulloch, manager of heavy equipment sales; C. J. White, manager of the Tulsa branch; R. L. Auker, office manager in Oklahoma City; A. V. Moses, service manager in Oklahoma City; Earl Basey, parts manager in Oklahoma City; and Ted Wilkerson, sales engineer in Tulsa.

Skilaw Redesigns Drills

Four redesigned electric drills have been introduced by Skilaw, Inc., Chicago, Ill., manufacturer of Skil portable tools. The new drills (Models 283, 2101, 2103, 2121) range in capacity from $\frac{1}{2}$ -in. to $\frac{3}{4}$ -in. in steel and up to $1\frac{1}{2}$ -in. in hard wood.

Field-engineered and tested, the new design is said to feature lightness, compactness and perfect balance to bring the greatest accuracy and portability yet known to the large-drill class. Ease of control and vibration-free performance eliminate fatigue where continuous drilling is a necessity.

The $\frac{1}{2}$ -in. and $\frac{3}{4}$ -in. models are heavy-duty, high-speed drills weighing no more than 14½ pounds and measuring less than 16½-in. in length. High torque, low-speed models are available in $\frac{3}{4}$ -in. and $\frac{1}{2}$ -in. capacities, with comparable advantages in weight and length. Speeds run as low as 250 revolutions per minute, and as high as 1,000 revolutions per minute.

Wetting Agent Described

Procedures for using liquid wetting agent Santomerse S in the manufacture of concrete blocks are described in a bulletin available from the Monsanto Chemical Co., St. Louis, Mo.

Denser, stronger and more uniform concrete products are said to result from the addition to the mix of small amounts of the wetting agent, which permits the use of less water by increasing its efficiency.

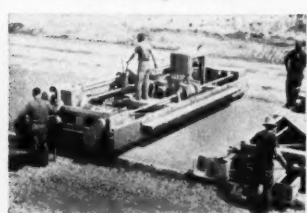
Other advantages cited in the bulletin include improved plasticity, lighter color, cleaner equipment and better dispersion of cement.

Warco Announces Appointment

W. A. Riddell Corp., Bucyrus, Ohio, announces the appointment of the Curry Equipment Corp. as exclusive distributor for Warco motor graders and Hercules road rollers in the Philadelphia territory.

The Curry Equipment Corp., founded in 1937, has its warehouse and office at 3132 West Thompson Street, Philadelphia. In addition to Warco and Hercules, the organization sells and services other leading lines of construction equipment.

Jaeger Concrete Spreader Uses Oscillating Screenshot



Jaeger CSS-20 Screw-Screen concrete spreader.

Jaeger Machine Co., Columbus, Ohio, is announcing its new Screw-Screen concrete spreaders. Available in two models (10 to 15-foot width and 20 to 25-foot width), the new machine combines a transverse, 12-inch, oscillating screen with the well-known Jaeger Remixing-Compacting Screw spreader. It is said to be the only spreader offering the triple function of spreading, initial strikeoff, and precision metering of concrete for the following finisher. Many advantages are claimed: Remixing and compacting of concrete on the subgrade by the spreading screw completely eliminates honeycombing and segregation; spreads stiffest mixtures and largest piles uniformly from form to form; strikeoff plate, immediately behind the screw, makes initial strikeoff to approximate grade line, then the 12-inch oscillating screen makes precision strikeoff and meters exactly right amount of material to the following finisher. Costly carryback by shovelers is eliminated; also, costlier delays of backtracking the paver. Any unusual deficiencies of material can be immediately seen and corrected. With no deficiencies or excesses of material, finisher can work farther back from the spreader, permitting concrete to condition properly. The finisher works with just right roll of material ahead of its screeds and uniform compaction under those screeds is assured.

This new Screw-Screen spreader and Jaeger's Type-X Diagonal Screenshot finisher are said to form a "three-screw paving team" capable of handling full output of the largest pavers, with big savings of equipment, time and labor. The team—with spreading, initial strikeoff and precision metering accomplished by the first unit, and transverse and diagonal screenshot finishing by the second—is claimed to eliminate the need for a second finisher on high speed paving. Jaeger also points out that the Screw-Screen spreader can spread and strike off base course on its first pass (with screen raised and inoperative), back up for the pavers to pour the top course, then make its spreading, strikeoff and precision screenshot pass (with screen lowered and oscillating). On paving which calls for brick or bituminous surfaces on concrete bases, it is said that the Screw-Screen spreader will remix, compact and spread that base uniformly, strike off to approximate grade line, and adequately finish it, with no additional mechanical finishing necessary.

Both models offer easy 5-foot adjustability in 6-inch stages. Spreading screw on the 10 to 15-foot model is instantly reversible for spreading material toward either side form. On the 20 to 25-foot model, the screw is divided and permits spreading from center to side forms, side forms to center, or toward either side with both halves of the screw operating in the same direction. Directional control of the screws is instantaneous. On both models, the oscillating metering screen is Jaeger's single-lever quick-crown-change type, hydraulically lifted and with spring cushioned action.

Booklet for Military and Civilian Construction

"Timber for Military, Commercial and Industrial Buildings," published by the Timber Engineering Co. of Washington, D. C., an affiliate of the National Lumber Manufacturers Association, is a profusely illustrated booklet devoting to outstanding examples of structures built of timber in all parts of the United States.

It presents the advanced uses to which the Teco connector system of timber construction, using the wedge-fitted split-ring connectors and Trip-L-Grip framing anchors, have been put in many types of buildings. The booklet also treats glue-laminated timber construction and the gracefully decorative lamella construction.

Koppers Geared to High Output

Koppers Co., Inc., Pittsburgh, Pa., will enter the year 1951 with facilities geared to produce at high levels, not only for the needs of its civilian customers, but also to meet whatever work the company is called upon to perform for the national defense, Gen. Brehon Somervell, chairman and president, reports today in a year-end statement.

Of Koppers' present backlog of orders, only about 8 per cent is attributable to direct orders for military goods, General Somervell said.

General Somervell said that Koppers stands ready to quickly convert such of its facilities as are applicable to defense production, if and when requested to do so by the government.

"The major portion of our present products and services, however, are essential in peacetime and even more essential in wartime," he stated.

During 1950, Koppers has continued its program of modernization in many of its plants, the Koppers executive said, and the increase in efficiency obtained is accelerating production.

Business of Koppers during 1950 was favorable from the viewpoint of sales, profits, and preparation for the future, General Somervell declared. Highlights of the company's business activity included:

Demand of the steel and heavy metals industries in their forward-looking programs of increasing production found Koppers Engineering and Construction Division well prepared to provide services at a rate even exceeded that provided in the busiest World War II year of 1944.

During 1950, this division completed and placed in operation nine coke batteries, comprising 44 ovens in the United States and one battery of 57 ovens in Chile. Some idea of what these Koppers-built ovens mean to the national economy is realized from the fact that the 448 ovens will produce enough coke annually to fill the requirements for making nearly 3,500,000 tons of pig iron. Or, to put it another way, coke produced by these ovens could provide the year-around heating requirements for all the homes in Pittsburgh, St. Louis, and Toledo.

Koppers Chemical Division, formed four years ago, made marked progress in the chemical and plastics fields. Sales have been consistently higher than those of 1949.

Other products of the company which were in especially high demand in 1950 included coke, pig iron, Fast's self-aligning couplings, tar acids, and some pressure-treated wood products.

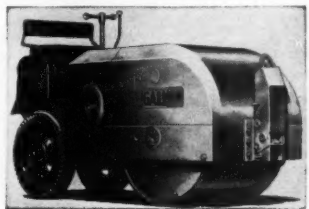
During the year Koppers built for its own operation two new plants, one at Warren, Ohio, which manufactures pitch coke for making carbon electrodes used in the aluminum industry, and the other at Port Arthur, Ontario, which makes protective coatings for pipelines from the new Alberta oil fields.

Galion Iron Works Announces Portable Roller

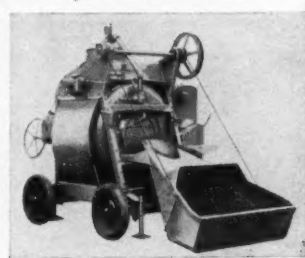
According to the manufacturer, Gallion Iron Works & Manufacturing Co., Gallion, Ohio, several outstanding advancements have been made in the new model Gallion variable weight portable roller. Steering is now done by hydraulic power under finger-tip control. A rugged spur gear final drive replaces the old chain drive, and a constant-mesh transmission eliminates gear-clashing and assures smooth gear-shifting.

Other improvements claimed for the new Gallion portable are: easily adjusted Twin Disc, over-center, forward and reverse clutches; new design hydraulically operated towing hitch which folds back compactly against roller housing when not in use.

The compaction effectiveness of this Gallion portable roller is said to equal that of a conventional 5-7 ton tandem roller. Compression under roll, without water ballast, is listed at 130 pounds per inch of roll width. With 2,300 pounds of water added to the roll, compression is raised to 192 pounds per inch. The compression roll is unusually large for a portable roller—35 in. diameter by 42-in. wide. It is fitted with mats and a sprinkler system.



Kwik-Mix Announces Improvements in Mixer



Kwik-Mix Model 16-S concrete mixer.

The Kwik-Mix Co. of Port Washington, Wis., has announced important improvements affecting both the design and performance of a new, heavy-duty type Model 16-S concrete mixer. A subsidiary of the Koebering Co. of Milwaukee, Kwik-Mix is a pioneer manufacturer of concrete, plaster-mortar and bituminous mixers and the Moto-Bug, a heavy-duty power wheelbarrow.

In construction features, the new 3-bag mixer is designed with heavier frame sections, coil spring mounting and cast steel drum heads having machined roller paths. Drum roller shafts revolve on larger, internal double row, self-aligning ball bearings mounted in pillow boxes attached to heavy trusses securely welded to the frame.

In addition, the 27-horsepower gasoline engine comes equipped with a clutch and a spring loaded hoist clutch is kept in constant proper engagement to eliminate the need for frequent adjustments. Contact points on each end of the charging skip supporting bar are now provided for the selective skip shaker to produce a quick, positive vertical action for faster results.

Other major changes incorporated in the new Kwik-Mix machine include an improved water valve and lever arrangement and a positive Batchmeter actuating mechanism. To facilitate field operation, the new model is quickly interchangeable to discharge either from side or end, depending on the best operating condition.

As with the previous model, the Kwik-Mix tower loader attachment for loading trucks or depositing concrete at higher levels can be attached to the new mixer as an optional unit. Standard equipment includes the characteristic Kwik-Mix Flow Line discharge chute, automotive type steering and the automatic and accurate water measuring system.

Caterpillar Executive is Honored Abroad

A review of diesel engine development at the research laboratory of Caterpillar Tractor Co., Peoria, Ill., was given as the James Clayton lecture at the general meeting of the Automobile Division, Institution of Mechanical Engineers, London, England, on November 14 by C. G. A. Rosen, former director of research at Caterpillar and now consulting engineer.

Mr. Rosen is the sixth man so awarded the annual James Clayton lecture honor and the second American.

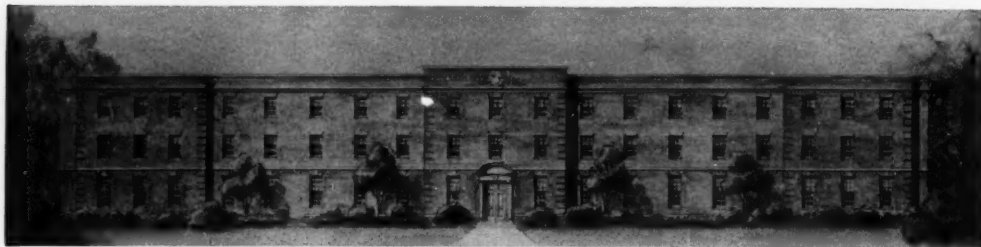
Entitled "Significant Contributions of the Diesel Research Laboratory," Mr. Rosen's address dealt with the precombustion-chamber process, the composition of combustion gases, flame duration, temperature distribution, the mechanism of ignition, and combustion-chamber deposits. He also discussed the development of fuel-injection equipment, preheating, precooling, and the evolution of the fuel pump.

He described several types of check valve and fuel valve, and the fuel-pump control of engine torque characteristics, and made comments upon materials for cylinder liners and piston rings.

Mr. Rosen delivered condensed versions of his talks at three different branches of the Institution in Great Britain.

A graduate from Cogswell Polytechnic College and the University of California, he began as a draftsman with the Dow Pump and Diesel Engine Co. in 1915, and rose to be chief engineer. In 1922 he set up a consulting practice on diesel problems. During six years as consultant, he was instructor in diesel engines for the University of California Extension Course, and received an M.E. degree. From 1928 until 1949 he developed mobile diesel engines and direct research for Caterpillar Tractor Co., where he continues to serve in an advisory capacity.

Duke University Construction Totals \$2,500,000



Above—Architect's drawing of the million dollar nurses' home being erected at Duke University, Durham, N. C. Of Georgian architecture, the brick and stone building will house 300 nurses. H. L. Coble Construction Co., of Greensboro, is the contractor; William O. Frank, the architect, and A. C. Lee, the engineer. Below—The men's graduate dormitory, also to cost about one million dollars, will accommodate about 400 students. The four-story building will be of similar design to the nurses' home in architecture and construction.



The \$2,500,000 construction program at Duke University, Durham, N. C., includes a new nurses' home, a new men's graduate dormitory, a cancer and heart research wing on the west campus and complete renovation of Epworth Inn on the east campus.

Most of the funds for the new structures have come from private donors, foundations and federal agencies, according to President Hollis Edens, who pointed out that only a small part of the current work is included in the \$12,000,000 development launched a year ago.

H. L. Coble Construction Co., of Greensboro, is erecting the million-dollar nurses' home. The structure is of Georgian design and will be of brick and limestone

construction. It will face the graduate dormitory, which will be of similar architecture and construction. Both are to be located on Duke Hospital at Erwin Road.

The nurses' home is to be named in honor of Mrs. Elizabeth P. Hanes, widow of the late Dr. Frederic M. Hanes, a former member of the Duke medical faculty. Mrs. Hanes' gift was augmented by a \$440,000 grant of state and federal funds. The two-story building will house 300 nurses and will include space for classrooms and faculty offices.

Also a million-dollar project, the graduate dormitory will be a three-story building with accommodations for 400 students, including dining hall facilities,

reception and recreation areas. This building is the only current project being undertaken as part of the development program. In fact, it is the first structure in that plan.

Other construction proposed under the development are additional dormitories, a student center and an administration building. Funds for scholarships and fellowships, as well as increased faculty salaries and for research are included in the development program.

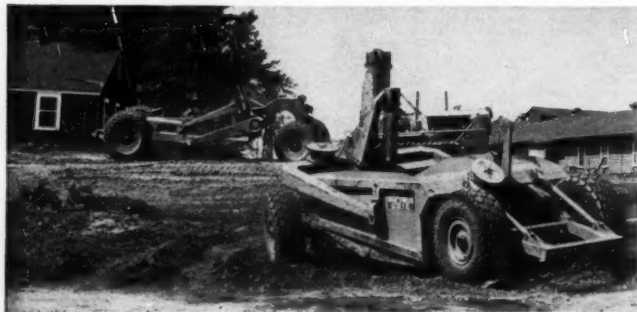
The center and heart research wing is the second addition to the Duke University's four-story medical research building within the last two years. C. A. Herrin, of Durham, is contractor for the addition, which is to house laboratories for a large number of cancer research projects and facilities for heart research. The building will free about twenty rooms in Duke Hospital.

Cost of the new wing is expected to be from \$350,000 to \$370,000, this being made up, in part, by a \$200,000 grant from the government through the National Advisory Cancer Council, and a \$43,605 grant from the Public Health Service awarded earlier this year. Several individual donors supplied the balance of the money. The wing will be finished next summer.

Work is being finished on the women's college campus of Duke on renovation of Epworth Inn, one of the university's oldest buildings, where approximately fifty women graduate students are being housed. The project cost \$100,000. Epworth Inn was a dormitory of old Trinity College until that institution was changed

(Continued on page 49)

Below—Equipment being used on the site of the nurses' home under construction as part of \$2,500,000 program at Duke University.





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Above—Neches River flows through the recently finished Dam "B" spillway constructed near Jasper, Texas, by the Fort Worth District of the Corps of Engineers. The spillway is 336 feet long and contains six control gates each 35 feet wide and 40 feet high. Not yet finished is the 6,887-foot long earthen dam flanking the spillway structure. Construction is under supervision of Col. Delbert B. Freeman.

Fort Worth Engineer Office to Build \$4,008,400 Project

Fort Worth, long plagued by disastrous floods, will get a new and improved floodway to harness the often-turbulent waters of the Clear Fork and West Fork of the Trinity River, which pass through the sprawling Texas city.

The project has been authorized by the United States Congress and is being constructed under the supervision of the Fort Worth District, Corps of Engineers.

Plans call for improvement and strengthening of levees and for widening, straightening and clearing of the river channels.

Excavation in the floodway and channel will require the removal of approximately 7,000,000 cubic yards of material.

Numerous bridges and public utilities will be altered to conform to the improved floodway channel. This channel will be 58,385 feet long. Levees will vary

in height but will average 13 feet above natural ground.

Federal cost of the project is estimated at \$4,008,400 while local interests will furnish land, rights-of-way, etc., valued at about \$2,505,000. To finance this and other local flood control projects, the Tarrant County Water Control and Improvement District No. 1 is taking steps to call a \$7,000,000 bond election.

The initial contract for the improvement of the Fort Worth Floodway went to J. W. Moorman & Son, of Muskogee, Oklahoma, who will improve approximately 6,000 feet of the Fort Worth Floodway.

Under this contract a loop of the old channel will be eliminated, thereby shortening the floodway about 2,400 feet.

Also under contract is the improvement of a railroad bridge by the Chicago,

Rock Island and Pacific Railroad Co., of Chicago, Ill.

The railroad company will complete the necessary detailed plans and specifications and will be responsible for the construction of four new reinforced concrete piers and the erection of steel girder spans. The contract is in the amount of \$212,645.

This is one of twelve bridges which require modification in connection with the improvement of the Fort Worth Floodway project.

Also under way is the clearing of a portion of the Trinity River channel in the industrial area of Dallas, Texas.

This work is being done by William Stanley Dozier, of Hebron, Texas.

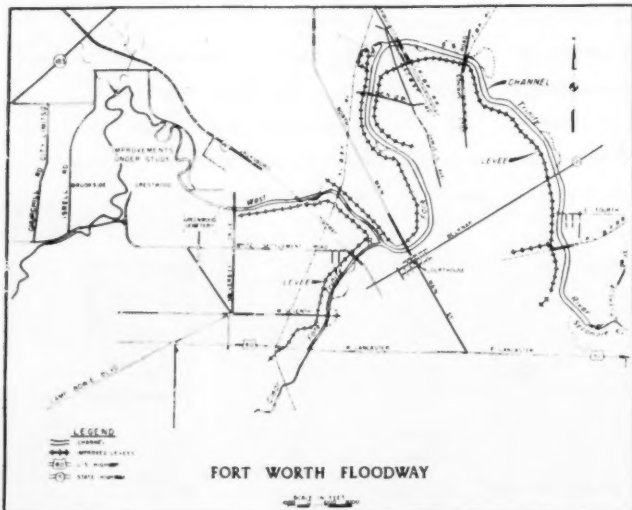
Under this \$93,000 contract approximately five miles of the Trinity River channel are being cleared of brush and timber. The contractor has 150 days to complete this work.

In addition to the floodway improvement program, the Fort Worth District of the Corps of Engineers is constructing four dam and reservoir projects in the upper Trinity watershed. These are Benbrook, Lavon, Grapevine, and Garza-Little Elm Dams in the Fort Worth-Dallas area.

The construction activities are under the supervision of Col. Delbert B. Freeman, Fort Worth District Engineer, Corps of Engineers.

Robbins Stresses Policy on Drafting Engineers by General Hershey

Deferment of engineers and scientists from military service is an important question of national policy not to be determined lightly or with flippant words, declared Paul H. Robbins, executive director of the National Society of Professional Engineers, in commenting upon the remarks of Gen. Lewis B. Hershey, National Selective Service Director, before the Society for Personnel Administration.



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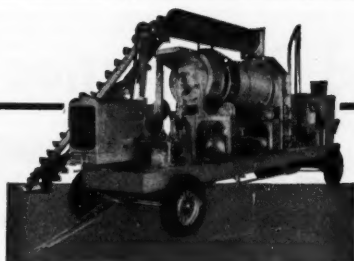
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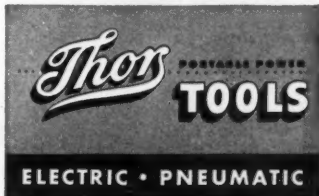
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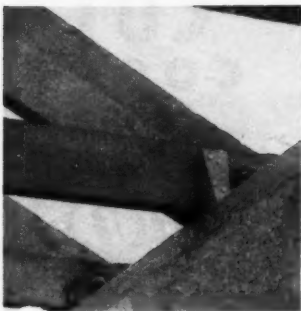
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Trusses Lower Cost of Hagerstown Housing Project



Above—Workmen are shown erecting Teco pre-fabricated trusses on one of the 140 homes being erected by United Engineering Co. at Hagerstown, Md. The trusses, which eliminate the need for bearing partitions, are an important factor in United's ability to construct the homes for \$6,300.

Left—Close-up shows how the trusses are tied to the side walls by "Teco connectors," flanged 16 gauge galvanized steel. The eight parts in each truss can be assembled in twenty minutes. Three man-hours are needed to erect the 14 trusses used in each house.

A newcomer has entered the home construction field in Hagerstown.

In its first effort the United Engineering Co. has tackled the low-cost housing problem. Its plan is to build 140 homes in the \$6,000-\$8,000 class, the largest housing project to be undertaken in Hagerstown since the war.

The homes will be erected in groups of 12 on a 55-acre suburban tract. Work on the first group is well advanced, with five now under roof. Construction of the entire project is expected to take three years.

The basic design is a four-and-one-half room, Colonial style dwelling, 24 by 30 feet. It will sell for \$6,300 and may be financed through FHA Title 203. Variations in design will permit somewhat larger units of the same style, costing around \$7,500.

Plans call for the use of beveled cinder blocks in all units. Asphalt shingles will be used in roofing. Floors will be reinforced concrete, covered with asphalt tile blocks.

The homes will be constructed without basements. Heat will be furnished by a gas-fired forced air system.

United Engineering was formed in 1947. Prior to this project it designed numerous buildings in the Hagerstown area and did structural drafting for Bethlehem Steel and other firms.

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President of the concern is Claude D. Williams, a civil engineering graduate who was formerly associated with American Bridge Co. and Fairchild Aircraft Corp.

Besides mass production, with its consequent purchasing savings, two factors enter into the company's ability to produce the homes within their stated price range.

One is the use of Teco prefabricated trusses in roofing, which eliminate the need for bearing partitions. These trusses were designed by Timber Engineering Company, Washington, D. C., and are supplied in knock-down form. Cut to size and pre-drilled, the eight component parts of each truss can be bolted together by one man in 20 minutes.

Two "Teco connectors," made of flanged 16-gauge galvanized steel, tie each truss to the side walls. The time to erect the 14 trusses used in each house is approximately three man-hours.

The second major economy is gained through elimination of basements. The project site is rocky, and basement excavation costs on an undertaking this size would be extremely high. Hence the company's savings here will be important.

Baltimore Office Assumes Military Project Duties

The Baltimore district of Corps of Engineers, assumed military construction duties on January 2, according to an announcement by Lt. Col. A. C. Welling, district engineer. The Baltimore office performed a large volume of military construction in this area from 1941 through 1947. More recently, however, such work in Virginia, District of Columbia, Maryland and Pennsylvania was centralized in the Washington District while the volume was declining.

One of the first projects to be transferred to the Baltimore District will be completion of the Organized Reserve Corps Armory now under construction at Baltimore. Responsibility for construction at other military installations in eastern Maryland also will be assumed by the Baltimore office.

The Baltimore District, which is located at Twenty-fourth Street and Maryland Avenue, also will continue with such portions of its regular civil works duties as have been approved after screening from a national defense standpoint. These duties include flood control construction and river and harbor improvements. A Veterans' Administration hospital project now in progress at Baltimore also is under supervision of this office.

\$1,806,931 Bid Low On Worcester School

Charles E. Brohawn and Son of Cambridge was the low bidder on the proposed new white high school for Worcester County.

The firm's bid was \$1,806,931. Other bidders on December 12 were:

Baltimore Contractors, Inc., \$1,908,000; Charles F. Rohleder, Philadelphia, \$1,966,000, and J. Roland Dashiell and Sons, Salisbury, Md., \$2,047,000.

Paul Cooper, superintendent of the county's school system, said no award could be made immediately because the bid is far in excess of funds available for the work.

The county has \$1,500,000 in hand for the proposed new white and colored high schools. The Dashiell firm, with a proposal of \$728,000 recently, was low bidder on the colored building.

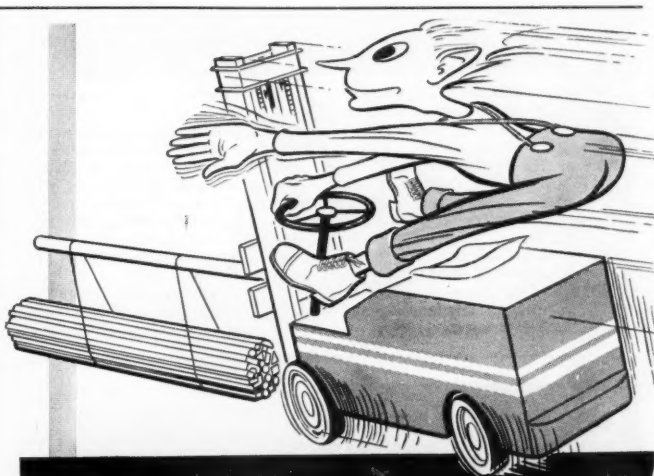
Mr. Cooper said some phases of construction would have to be eliminated and that would have to be discussed with the school board. The board has already decided to eliminate the gymnasium on the colored school.

Similar action may be necessary on the white school, he added.

Metalcraft Moves Office

T. T. Tucker, president of the Metalcraft Corp., has announced that the main offices of the corporation have been moved from Marietta to Atlanta. The new address is 1051 West Peachtree Street. Mr. Tucker said that the move was made to facilitate the handling of Ordnance contracts. The company's engineering department has developed specialized parts for combat and general purpose vehicles.

William J. Marshall is the new vice president in charge of production. Charles F. Mesurac is company treasurer. Mr. Tucker is one of the founders and was first president of the Georgia Engineering Society.



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Along through the years and to current building the materials and equipment that go into buildings are for permanence, as well as buildings pleasing to the eye and comfortable living or working quarters.

Dwellings today and in recent years are single-family homes, duplex houses or apartment houses, and the most recent lay-out of apartments are 3 and 4 rooms. As to the styles of architecture, they are usually in harmony with surrounding buildings.

Completed is Watkins Acres, apartment house units, 52 apartments, and the most comprehensive building of its type attempted in Frederick.

In this city of clustered spires, the churches are Gothic or Colonial, modified or Byzantine architecture, which for their purity of design lend dignity and impressiveness.

The industrial buildings are built according to basic requirements principally stressing well-lighted floor space. More recent structures include landscaping for exterior beautification.

The Lansdale Corp., a subsidiary of Philco Corp., has purchased a site at Frederick for manufacture of critically short electronic tubes for the armed forces and for essential civilian requirements. Construction is to start early in 1951. The plant will have an area of 110,000 square feet. M. Ward Easby is the architect.

Retail stores are generally well designed and attractive and have well-lighted floor space. A substantial number have modernized their stone fronts since the end of World War II, and numerous others have employed architects to draw plans and specifications for proposed changes in building fronts.

Educational buildings—the Colleges—Hood, Mt. Saint Mary's and St. Joseph's have healthful and stimulating campuses in which are situated the dormitories, auditoriums and gymnasiums that are beautiful and well adapted to the student bodies.

Farm buildings, both homes and barns, still show the influence of the early settlers, who were German or English. In recent years the requirements of dairying and sanitation have required radical changes in architectural design of dairy barns.

The Fraternal Order of Eagles has constructed a new home.

Three wings are under construction at the Frederick Memorial Hospital. It is contemplated to make an addition to the

nurses' home at that institution.

Building materials are available in good and plentiful supply, and are thirty to thirty-five per cent higher than in 1945.

Eastern Shore City Has Biggest Year

Salisbury's biggest building boom in its history sent construction activity to an all-time high of \$2,668,785 in 1950.

The high rate of construction work, both commercial and residential, climaxed a four-year period which likewise saw records shattered.

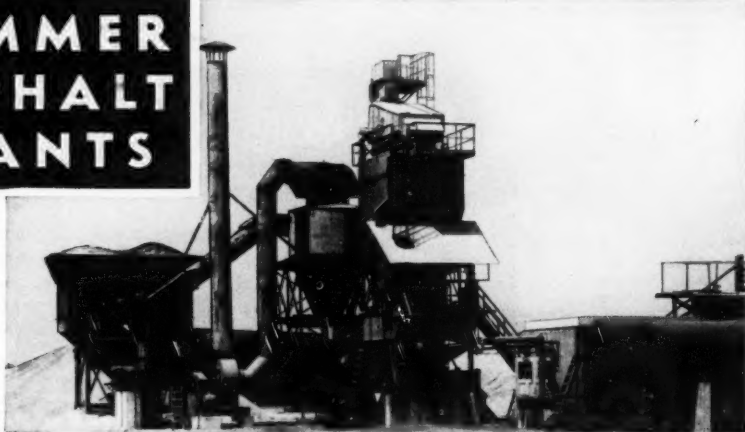
For the four-year period beginning in June of 1946, a total of \$9,479,386 worth of construction activity was recorded in the office of Building Inspector J. Woolford Jones.

In addition to the building boom within the corporate limits of the city, there was a great increase in activity on the edge of the city and in its suburbs. No records are kept of building activity in Wicomico County.

Mr. Johnson views prospects for the next four years with optimism, even though the nation may be at war. Expansion in a number of small industries useful in war plus annexation of additional territory by the city were cited as favorable factors.

Two new high schools are scheduled for construction during the coming year of 1951. Nearly \$200,000 worth of additions and alterations are to be made at

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the new Deer's Head State Hospital. That project, completed early in 1950 at a cost of over \$2,000,000, is outside the city limits and not listed on city building reports.

Another project under way is the \$922,000 new wing at Peninsula General Hospital. It is included in the 1950 figures.

Major activity during 1950 also included a number of plant additions and alterations, several new stores and business and the Beth Israel Synagogue as well as the new St. Francis de Sales Parochial School.

Since June, 1946, permits were issued for 520 new residences. The 1950 figure of 131 permits no doubt would have exceeded that figure if it had not been for federal restrictions on housing credit imposed during the year. As it was, the year's activity in housing failed to equal the all-time figure of 137 established in 1947.

Ruberoid Promotes Byrd

Three important promotions in the sales organization of Ruberoid Company were recently announced by Stanley Woodward, executive vice president.

Walter C. Byrd, for the past four years sales manager of the Mobile, Ala., district, has been appointed sales manager of the company's entire Southern division with headquarters in Baltimore. Mr. Byrd last month completed 25 years of continuous service in the Ruberoid sales department in the South.

Succeeding Mr. Byrd as sales manager of the Mobile district is Frederick K. Sweeney who has been for some years assistant sales manager of the Western division with headquarters in Chicago. Mr. Sweeney has been with Ruberoid since 1938.

Fred Groot has been appointed assistant sales manager of the Western division, with headquarters in Chicago, succeeding Mr. Sweeney.

Soil Pipe Institute Opens Washington Office

Robert Dick, executive secretary of the Cast Iron Soil Pipe Institute, has announced opening of Washington offices in the Heurich Building, 1627 K Street, N.W. This organization represents 27 major manufacturers of cast iron soil pipe and fittings.

Duke Building Program

(Continued on page 42)

to Duke University.

Architect for the new nurses' home is William O. Frank, of the office of Horace Trumbauer, Philadelphia. George F. Hackney, of Durham, is architect for the cancer and heart research building. A. C. Lee, of Duke University, is engineer for both buildings.

Heating and ventilating contractor for the nurses' building is Rowe-Goodin-Jones, Durham; for the cancer-heart building, Durham Plumbing and Heating Co., Durham. The Rowe-Goodin-Jones concern is plumbing contractor for the latter project, while plumbing for the nurses' home is by Arrow Plumbing and

Heating Co. of Durham. Electrical contractors are Starr Electric Co., Greensboro, for the home, and Durham Electrical Construction Co., of Durham, for the research building. Refrigeration is to be installed in the latter by White Refrigeration Service of Durham.

Material vendors on the Hanes House, as released by H. L. Coble Construction Co., include: Constructors Supply Co., Inc., Durham; Beaman's, Inc., Greensboro; Mitchell & Becker Co., Charlotte; W. Fred Casey & Co., Charlotte; William E. McGill, Atlanta; Hardware Distributors, Inc., Greensboro; Sanymetal Products Co., Cleveland, Ohio; Snow Lumber Co., High Point; Carolina Granite Co.,

Greensboro; Truscon Steel Co., Greensboro; Inland Steel Products Co., Milwaukee, Wisc.; Virginia Steel Co., Richmond, Va.; Bethlehem Steel Co., Baltimore, Md.; A. C. Horn Co., Inc., Long Island City, N. Y.

Among the subcontractors are the following: Guaranteed Waterproofing Co., Greensboro; Southern Waterproofing Co., Greensboro; Pittsburgh Plate Glass Co., Durham; C. P. Buckner, Winston-Salem; James A. Smith & Son, Durham; Beaman's, Inc., Greensboro; R. L. Dresser, Raleigh; Monarch Elevator & Machine Co., Greensboro; Atlantic Marble & Tile Co., Charlotte; Budd-Piper Roofing Co., Durham, and C. C. Mangum.



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San Antonio 6, Tex.

If it's made of clay it's GOOD...

If it's made by Dickey it's BETTER

Gregg Retires from T.C.I.

Robert Gregg has retired as president of the Tennessee Coal, Iron and Railroad Co., and has been succeeded by Arthur V. Wiebel, who moved up from vice president in charge of operations. John Pugsley, formerly comptroller, has been named to the newly established position of executive vice president.

Succeeding Mr. Wiebel as vice president in charge of operations is J. M. Spearman, who advances from the position of manager of manufacturing operations.

Mr. Pugsley's successor as comptroller is Hartwell A. Greene, presently Assistant Comptroller.

Mr. Wiebel, the new top management official of T.C.I. came to the U. S. Steel subsidiary, at Birmingham, in the fall of 1946 from Pittsburgh, where he was assistant to vice president in charge of engineering and operations, United States Steel Corp. of Delaware. On January 1, 1947, he became T.C.I. vice president in charge of operations.

Mr. Gregg, in retiring, completes his second tenure as president of T.C.I. He first joined the Company August 1, 1932, as vice president in charge of sales, advancing to the presidency October 16, 1933, and continuing until February 1, 1935, when he became vice president in charge of sales, United States Steel Corp. He returned to T.C.I. as president on January 1, 1938.

Smith-Gray Opens Albany Branch

Smith-Gray Electric Co. of Columbus, Ga., has opened a branch office and shop at 927 Roosevelt Ave., Albany, Ga., under the management of J. L. Malone.

Mr. Malone is an electrical engineer and was formerly associated with White Electrical Construction Co. of Columbus. The company does business in Albany, under the name of Georgia Electric Co. The firm is equipped to quote on all types of electrical construction in the South.

It is authorized distributor for Delco Motors, Allis-Chalmers Motor Controls, Tescope and Rockwood Drives, in addition to being official representatives for United Motor Service.

PUBLIC BUILDING

(City, County, State, Federal; Schools)

	December, 1950		Contracts Awarded 1950
	Contracts Awarded	Contracts to be Awarded	
Ala.	\$2,419,000	\$3,105,000	\$23,944,000
Ark.	306,000	705,000	48,346,000
D. C.	294,000	1,407,000	12,336,000
Fla.	3,392,000	4,940,000	43,222,000
Ga.	2,005,000	640,000	40,706,000
Ky.	1,024,000	4,655,000	7,412,000
La.	2,517,000	3,372,000	47,356,000
Md.	19,343,000	21,494,000	102,346,000
Miss.	912,000	2,232,000	22,971,000
Mo.	4,312,000	4,849,000	50,810,000
N. C.	5,823,000	15,850,000	128,993,000
Okla.	302,000	940,000	18,837,000
S. C.	263,078,000	1,888,000	285,992,000
Tenn.	8,132,000	3,551,000	43,651,000
Tex.	11,124,000	18,774,000	178,396,000
Va.	4,861,000	9,094,000	65,781,000
W. Va.	2,236,000	8,343,000	6,315,000
Total	\$332,080,000	\$106,039,000	\$1,126,714,000

PRIVATE BUILDING

(Assembly, Commercial, Residential, Office)

	December, 1950		Contracts Awarded 1950
	Contracts Awarded	Contracts to be Awarded	
Ala.	\$9,848,000	\$8,715,000	\$27,360,000
Ark.	1,700,000	1,700,000	11,936,000
D. C.	40,000	40,000	17,563,000
Fla.	16,376,000	5,801,000	201,624,000
Ga.	9,889,000	11,543,000	56,738,000
Ky.	9,000,000	9,000,000	11,437,000
La.	6,169,000	8,832,000	130,988,000
Md.	10,822,000	3,010,000	135,643,000
Miss.	476,000	1,260,000	13,091,000
Mo.	2,089,000	6,030,000	73,118,000
N. C.	13,139,000	6,363,000	76,046,000
Okla.	350,000	350,000	29,388,000
S. C.	1,659,000	1,659,000	29,769,000
Tenn.	13,907,000	1,810,000	64,138,000
Tex.	29,181,000	40,412,000	315,602,000
Va.	14,483,000	7,130,000	32,902,000
W. Va.	1,363,000	1,363,000	.....
Total	\$130,388,000	\$118,616,000	\$1,214,337,000

ROADS, STREETS, BRIDGES

	December, 1950		Contracts Awarded 1950
	Contracts Awarded	Contracts to be Awarded	
Ala.	\$ 262,000	\$10,638,000	\$14,775,000
Ark.	.....	5,946,000	12,601,000
D. C.	.....	120,000	401,000
Fla.	17,012,000	8,920,000	62,000,000
Ga.	8,900,000	1,460,000	28,633,000
Ky.	555,000	7,054,000	38,260,000
La.	5,232,000	1,880,000	45,758,000
Md.	4,982,000	6,612,000	52,914,000
Miss.	1,709,000	6,830,000	15,524,000
Mo.	.....	11,517,000	17,410,000
N. C.	3,583,000	17,376,000	58,594,000
Okla.	3,582,000	15,717,000	44,832,000
S. C.	4,276,000	6,800,000	48,088,000
Tenn.	18,942,000	4,270,000	101,906,000
Tex.	3,654,000	7,821,000	73,417,000
Va.	922,000	4,515,000	10,557,000
TOTAL	\$64,971,000	\$126,282,000	\$622,335,000

INDUSTRIAL

	December, 1950		Contracts Awarded 1950
	Contracts Awarded	Contracts to be Awarded	
Ala.	\$6,438,000	\$1,650,000	\$68,548,000
Ark.	.....	200,000	49,943,000
D. C.	.....	.....	9,000,000
Fla.	1,261,000	380,000	50,309,000
Ga.	360,000	7,734,000	15,175,000
Ky.	533,000	18,552,000	30,228,000
La.	7,192,000	11,257,000	77,828,000
Md.	639,000	14,417,000	25,919,000
Miss.	330,000	1,500,000	48,088,000
Mo.	4,119,000	10,609,000	73,353,000
N. C.	3,108,000	8,950,000	89,980,000
Okla.	1,457,000	5,600,000	27,172,000
S. C.	4,237,000	1,500,000	32,730,000
Tenn.	530,000	4,550,000	61,981,000
Tex.	7,655,000	8,655,000	169,868,000
Va.	1,780,000	16,800,000	40,451,000
W. Va.	11,969,000	31,803,000	19,359,000
TOTAL	\$51,548,000	\$147,457,000	\$891,132,000

PUBLIC ENGINEERING

(Dams, Drainage, Waterworks, Sewers, etc.)

	December, 1950		Contracts Awarded 1950
	Contracts Awarded	Contracts to be Awarded	
Ala.	\$ 557,000	\$1,021,000	\$42,708,000
Ark.	230,000	10,928,000	14,272,000
D. C.	32,000	305,000	1,005,000
Fla.	1,546,000	7,900,000	48,905,000
Ga.	2,262,000	1,425,000	14,451,000
Ky.	595,000	875,000	10,111,000
La.	4,267,000	2,708,000	55,703,000
Miss.	2,559,000	437,000	27,160,000
Mo.	1,426,000	4,744,000	22,389,000
N. C.	812,000	958,000	11,533,000
Okla.	1,403,000	11,853,000	22,130,000
S. C.	1,515,000	4,815,000	11,720,000
Tenn.	21,206,000	261,365,000	48,205,000
Tex.	18,515,000	14,750,000	127,901,000
Va.	2,490,000	2,446,000	26,507,000
W. Va.	1,310,000
TOTAL	\$58,545,000	\$328,164,000	\$514,434,000

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A305
SPECIFICATIONS

Bar No.	NOMINAL DIMENSIONS ROUND SECTIONS			REQUIREMENTS OF DEFORMATIONS		
	Unit Wt. Lbs. Ft.	Diameter-Inches (Decimal)	Cross Sectional Area Sq. Inches	Perimeter	Max. Avg. Spacing In.	Min. Height In.
21	0.167	0.250	0.05	0.785	0.262	0.015
3	0.376	0.375	0.11	1.178	0.350	0.020
4	0.668	0.500	0.20	1.571	0.437	0.028
5	1.043	0.625	0.31	1.963	0.526	0.038
6	1.502	0.750	0.44	2.356	0.612	0.044
7	2.044	0.875	0.60	2.749	0.700	0.050
8	2.670	1.000	0.79	3.142	0.790	0.056
9	3.400	1.128	1.00	3.544	0.889	0.064
10	4.303	1.270	1.25	3.990	0.987	0.071
11	5.313	1.410	1.56	4.430	.....	.....

*Bar numbers are based on the number of 1/8 inches in the nominal diameter of the section.
†Bar number 2 in plain rounds only.
‡Bars numbered 9-10-11 correspond to former 1" sq., 1 1/8" sq., and 1 1/4" sq. sizes, and are equivalent to those former standard bar sizes in weights and nominal cross-sectional areas.
§Chord of 12 1/2% of Nom. Perimeter.



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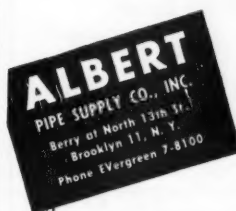
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Heat Mirrors Used for House Heating

"You don't have to heat the air in your house to be comfortable in winter," reports Dr. George Perkins, Reynolds Metals Company's technical service director, in a recent statement. "A new system provides a feeling of comfort by using 'heat mirrors' and a radiant heat source," Dr. Perkins explains. It is based upon the principles of the "heat-and-cold mirror" applied in a new house built by Dr. C. A. Mills, head of the University of Cincinnati's Laboratory for Experimental Medicine.

Reynolds Metals Company, Louisville, Ky., cooperated with Dr. Mills in supplying aluminum foil to surface interior walls, ceilings, and floors; as well as other aluminum products necessary to the house construction. Instead of flimsy mass type insulations, his house has light plywood walls with no insulation but aluminum foil wall coverings.

Dr. Perkins points out that although the basic principles of this form of heating have been known and applied for many years, this is the first case where they have been successfully projected into domestic heating and cooling. In a demonstration by Dr. Mills, air in one foil-lined room is kept at 35 degrees F., yet you are perfectly comfortable stripped to the skin. Radiant heaters keep you warm. In another foil-lined room with air maintained at 55 degrees F., you are still comfortable even though heavily bundled up in warm clothes and coat because chilled cooling plates absorb the heat radiated from your body.

Dr. Perkins explains how these principles are applied to the Mills house by use of a cornice or trough around all sides of each room and about a foot below the ceiling. This cornice contains an electric heating element used in winter. The heat radiates to the ceiling, walls, and floor, where the aluminum foil coverings bounce it around till it reaches the occupants of the room, supplying heat to their bodies and keeping them comfortable even though actual air temperature may be far below the usual "comfort" value of approximately 72 degrees Fahrenheit.

In summer, a refrigerator is pumped through pipes in the cornice. Then heat from your body is bounced around by the aluminum foil wall, ceiling, and floor surfaces till it reaches the pipe and is conducted away. This keeps you feeling cool even though room temperatures may be 85-90 degrees F.

Each room is made a radiant-reflective box by use of such innovations as window drapes that reflect heat from tiny aluminum particles in the material. The heat "mirrors" in the house are invisible, yet wall coverings, blinds, curtains, carpets, even bedding are made reflective by use of aluminum in one form or another.

According to Dr. Perkins, the principles of design so well carried out in the Mills experimental house may well be the means of bringing perfect climate control into all our homes shortly. Most significant is that old houses can easily be "reflective radiant conditioned" without extensive remodeling.

"Brik-Toter" Developed

This new lightweight Brik-Toter conveyor is described in a bulletin issued by the Mar-Rail Conveyor Co., Pawtucket, R.I. Brik-Toter handles glazed tile, cinder blocks, shale blocks, cement bricks, sand, lime, and short lengths of lumber. It is so light that two men on either end can move it into position. The Brik-Toter is 20 feet long, 14½ inches wide, and weighs 385 pounds—load capacity is over 1200 pounds evenly distributed. Bridge type trussed construction and torque frame eliminates all twist and sag. It is equipped with a 12-inch wide, 3-ply rough top vulcanized rubber belt. The bed is constructed with 16-gauge, 2-inch diameter tubular rolls, ball bearing mounted spaced on 12-inch centers and assembled in heavy gauge 3 by 1-inch pressed steel channel frames. A totally enclosed ½-horsepower gear motor furnishes the drive for the Brik-Toter and a flip of the all-weather starting switch puts the conveyor in operation. A gasoline motor drive is available at slight extra cost. The fixed speed of the belt is 60 feet per minute and tension adjustment is accomplished through takeup screws and self-aligning, grease sealed, ball bearings with alemit fittings mounted in slide.

Skill Pool Urged

(Continued from page 17)

designed for assembly or construction in the shortest possible time. Methods are being improved and materials are being studied.

Projects on which the Navy is working, according to Admiral Jelley, are an airfield pavement to withstand the pounding and heat of modern planes, alternates to use in place of materials in short supply, stabilization of sand beaches and marshlands for amphibious landings, and putting damaged ports back into operation quickly.

One accomplishment he proudly announced is a light-weight, diesel pile hammer, which he said "is quite a piece of equipment" with no boiler or air com-

pressor. The power mechanism is contained in the hammer. Also a Navy development is a light-weight, heavy-duty motor grader and a six-wheel drive and of about three-fourths the weight of a conventional machine.

Construction at Peak

(Continued from page 9)

Indicative of the present status of industrial building costs is the Austin Company index, which in the fourth quarter advanced four points to 179 (1926 equals 100). Prior to the outbreak of the Korean war, the figure held steady at a post-second-world-war low of 161.

The year-end increase is due to advances in prices of steel and steel products, and probably establishes a trend which will continue as overall wage rates are adjusted to conform with raises already granted in a number of basic industries, the Cleveland engineering and construction organization pointed out.

New construction throughout the country amounted to a record-breaking total of \$27,750,000,000, according to the joint estimate of the Commerce and Labor departments, which said the number of new housing units started far outdistanced any previous year's total. Both employment and building materials were also reported at a peak.

A total of \$11,500,000,000 was reported spent for erection of privately financed non-farm dwellings, or more than two-fifths of the total outlay for all types of work. The housing boom started in the last half of 1949 and reached the unprecedented proportions early in 1950.

Construction of schools, churches, hospitals and other institutional buildings both private and public also achieved high levels in 1950, with expenditures for highway construction, reclamation and flood

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NEWPORT NEWS, VIRGINIA

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control rising moderately over 1949 to a new high, the government agencies said.

The twelve-month private building total was placed at \$20,648,000,000. Of the figure, \$1,059,000,000 was for industrial construction, \$398,000,000 for warehouses, office and loft buildings; \$884,000,000 for stores, restaurants and garages; \$407,000,000 for religious buildings; \$269,000,000 for educational building; \$342,000,000 for hospital and institutional building.

Farm construction throughout the country accounted for \$1,087,000,000.

Public utility work was estimated at \$3,182,000,000, of which \$310,000,000 was for railroads, \$470,000,000 for telephone and telegraph work.

The public building total was set at \$7,067,000,000, broken down into: Residential, \$341,000,000; non-residential, \$2,310,000,000; industrial, \$220,000,000; educational, \$1,158,000,000; hospital and institutional, \$470,000,000; military and naval, \$180,000,000; highway, \$2,425,000; sewer and water, \$655,000; public service enterprises, \$185,000,000; conservation and development, \$875,000,000.

Plant and equipment expenditures by business this year will total \$21,900,000,000, according to a special survey by the Department and Commerce and the Securities and Exchange Commission.

While the figure is about one-fifth higher than last year, it is estimated that in physical volume it will represent about a one-sixth gain due to the rise in costs.

About two-thirds of the anticipated capital outlay increase is expected to be made by manufacturing companies. These will add \$10,600,000,000 to their facilities, an increase of \$2,600,000,000, or one-third.

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A-W 10x20 jaw crusher
RD-7 with bulldozer

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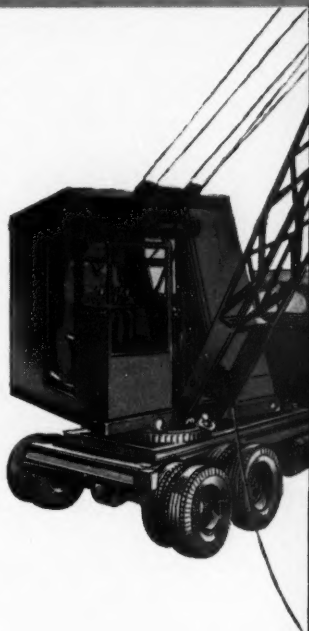
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